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On Mexican Millipeds

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ON MEXICAN MILLIPEDS *

By Ralph V. Chamberlin

This contribution toward knowledge of the diplopod fauna of Mexico is based primarily upon the extensive and important collections made during the last few years by Dr. F. Bonet of the Escuela Nacional de Ciencias Biologicas and Dr. O. Bolivar of the Instituto Enfermadades Tropicales of the Instituto Polytecnico Nacional. The chilopods of this same collection were reported upon in an earlier bulletin (Bull. Univ. Utah, Biol. Series, Vol. 7, No. 3, 1943). In addition to the material brought together by Drs. Bonet and Bolivar and associates, I have included in the present study a valuable collection made by Bryce C. Brown during 1942, and have listed as well certain species collected by Harry Hoogstraal and associates on recent expeditions (1939-1941) and a few taken by Mr. Phil Rau.

In Humbert and Saussure's "Etudes sur les Myriapodes" in the *Mission Scientifique au Mexique* (1872), 54 species are listed from the country, and in Pocock's treatise on the group in the *Biologia Centrali-Americana* 121 species are catalogued as known at that time, 48 of these being described as new. In comparison the importance of the collection here surveyed may be indicated by noting that it embraces 131 species of which 95 are described as new and only three of which are included in Pocock's list. The total number of species of millipeds now known from Mexico is in the neighborhood of 300. This number, however, is obviously far from complete, and it is therefore felt best to defer revisional work, much needed in the case of several genera and families, pending the accumulation of more ample material, especially from sections at present but poorly represented. The recent acceleration of field work involving this group, particularly under the effective stimulation of Drs. Bonet and Bolivar, has been such that its continuation should render a revision and adequate monograph of the millipeds of Mexico an early possibility.

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Systematic List of Species

Order COLOBOGNATHA

Family PLATYDESMIDAE

Platydesmus cerrobius Chamberlin

Platydesmus corzoi, n. sp.

Order CAMBALIDA

Family CAMBALOPSIDAE

Morelene mundus, n. gen. and sp.

Order SPIROSTREPTIDA

Family SPIROSTREPTIDAE

Orthoporus chiapasus, n. sp.
Orthoporus esperanzae, n. sp.
Orthoporus fortinus, n. sp.
Orthoporus guerreronus (Chamberlin)
Orthoporus leius, n. sp.
Orthoporus lenonus, n. sp.
Orthoporus leonicus Chamberlin
Orthoporus linares, n. sp.
Orthoporus mimus, n. sp.
Orthoporus morelus, n. sp.
Orthoporus mundus Chamberlin
Orthoporus torreonus, n. sp.
Orthoporus ugmalanus, n. sp.
Orthoporus victorianus, n. sp.

Order SPIROBOLIDA

Family RHINOCRICIDAE

Rhinocricus ixtapanus, n. sp.
Rhinocricus lamprus, n. sp.
Rhinocricus morelus, n. sp.
Rhinocricus potosiamus Chamberlin

Family ATOPETHOLIDAE

Aztecolus nigrior (Chamberlin)
Toltecolus garcianus, n. gen. and sp.
Hiltonius carpinus, n. sp.
Hiltonius crassus, n. sp.
Hiltonius erythrotypus, n. sp.
Hiltonius federalis, n. sp.
Hiltonius michoacanus, n. sp.
Hiltonius tancitarus (Chamberlin)
Hiltonius veracruzanus, n. sp.
Messicobolus hoogstraali Chamberlin
Messicobolus raui Chamberlin
Messicobolus totonacus, n. sp.
Tarascolus bolivari, n. gen. and sp.
Tarascolus clarus, n. sp.

Order JULIDA

Family ISOBATIDAE

Blaniulus guttulatus (Bose)

Nopoiulus minutus (Brandt)

Family PARAIULIDAE

Paraiulus pueblanus, n. sp.
Paraiulus phloibius Chamberlin
Paraiulus rosanus, n. sp.
Paraiulus schachti (Chamberlin)
Paraiulus zempoalus, n. sp.
Pheniulus phenotypus, n. gen. and sp.
Pheniulus mimeticus, n. sp.

Family JULIDAE

Diploiulus luscus (Meinert)

Order LYSIOPETALIDA

Family LYSIOPETALIDAE

Tynomma messicanum, n. sp.

Order STEMMIULIDA

Family STEMMIULIDAE

Stemmiulus leucus, n. sp.

Order CHORDEUMIDA

Family PSEUDOCLEIDIDAE

Cleidogona atoyaca, n. sp.
Cleidogona leona, n. sp.
Cleidogona nueva Chamberlin
Cleidogona nueva michoacana Chamberlin
Cleidogona rafaela, n. sp.
Cleidogona zempoala, n. sp.
Cavota crucis, n. sp.

Order POLYDESMIDA

Family XYSTODESMIDAE

Rhysodesmus alpuyecus, n. sp.
Rhysodesmus bolivari, n. sp.
Rhysodesmus bonus, n. sp.
Rhysodesmus brachus Chamberlin
Rhysodesmus cuernavacae Chamberlin
Rhysodesmus cumbres, n. sp.
Rhysodesmus elestribus, n. sp.
Rhysodesmus esperanzae, n. sp.
Rhysodesmus eunis, n. sp.
Rhysodesmus eusculptus Chamberlin
Rhysodesmus eutypus, n. sp.
Rhysodesmus frionus, n. sp.
Rhysodesmus garcianus, n. sp.
Rhysodesmus guardanus, n. sp.
Rhysodesmus intermedius, n. sp.
Rhysodesmus knighti Chamberlin
Rhysodesmus leonensis Chamberlin
Rhysodesmus malinche, n. sp.
Rhysodesmus morelus, n. sp.
Rhysodesmus pater, n. sp.
Rhysodesmus perotenus, n. sp.
Rhysodesmus potosianus Chamberlin
Rhysodesmus rubrimarginis, n. sp.
Rhysodesmus tacubayae, n. sp.
Rhysodesmus tepoztlanus, n. sp.
Rhysodesmus viabilis, n. sp.
Acentronus minor, n. gen. and sp.
Cruzodesmus ergus, n. gen. and sp.
Cruzodesmus browni, n. sp.
Cruzodesmus purojenus, n. sp.

Family RHACODESMIDAE

Ceuthauxus cruzanus, n. sp.
Ceuthauxus morelus, n. sp.
Ceuthauxus nuevus (Chamberlin)
Ceuthauxus palmitonus Chamberlin
Rachidomorpha vicinus, n. sp.
Pararachistes galeanae, n. sp.
Pararachistes potosinus, n. sp.
Pararachistes amblus Chamberlin
Neoleptodesmus dispersus, n. sp.
Sakophallus simplex Chamberlin
Tancitares michoacanus Chamberlin
Zeuctodesmus ferrugineus, n. sp.

Family SPHAERIODESMIDAE

Cyphodesmus hidalgonus, n. sp.
Sphaeriodesmus griseus, n. sp.
Sphaeriodesmus michoacanus Chamberlin
Sphaeriodesmus prehensor Pocock

Family EURYURIDAE

Amplinus crenus, n. sp.
Amplinus klugi Brandt
Amplinus tapachulae, n. sp.
Amplinus vergelenus, n. sp.
Amplinus xelittus, n. sp.

Family CHELODESMIDAE

Chondrodesmus nannus, n. sp.

Family STRONGYLOSOMIDAE

Orthoporpha gracilis (Koch)

Family PERIDONTODESMIDAE

Peridontodesmus medius, n. sp.
Peridontodesmus morelus, n. sp.
Peridontodesmus parvus, n. sp
Sierresmus hidalgonus, n. gen. and sp.
Maderesmus tepoztlanus, n. gen. and sp.
Maderesmus hoogstraali (Chamberlin)
Pinesmus setosus, n. gen. and sp.
Kalesmus phanus, n. gen. and sp.
Kalesmus eutropis, n. sp.

Family ONISCODESMIDAE

Bonetesmus verus Chamberlin

Family STYLODESMIDAE

Ilyma colotlipa Chamberlin
Ilyma morela, n. sp.
Ilyma orizaba Chamberlin
Ilyma potosina, n. sp.
Apsyma atopa, n. gen. and sp.
Cryptyma lobata, n. gen. and sp.
Eirenyma munda, n. gen. and sp
Orthyma clara, n. sp.
Bolivaresmus sabinus Chamberlin
Styraxodesmus chipinqueus, n. sp.
Telauxus fractus, n. gen. and sp.
Ceratesmus clarus Chamberlin

Family POLYDESMIDAE

Polydesmus chapultepecus, n. sp.

Order ONISCOMORPHA

Family GLOMERIDAE

Glomeris boneti, n. sp.

NEW GENERA

STATE LISTS

The following lists by states will serve to indicate the regions best represented in the collections considered in the present study. It will be seen that these regions are in the more central part of the country, embracing especially the states of Mexico, Morelos, Vera Cruz, Michoacan and adjacent areas. In the north Nuevo Leon also supplied a good representation.

COAHUILA

Orthoporus torreonus, n. sp.

NUEVO LEON

Orthoporus linares, n. sp.
Toltecolus garcianus, n. sp.
Aztecolus nigrior (Chamberlin)
Messicobolus hoogstraali Chamberlin
Tynomma messicanum, n. sp.
Cleidogona nueva Chamberlin
Pararachistes galeanae, n. sp.
Ceuthauxus nuevus, n. sp.
Rhysodesmus bolivari, n. sp.
Rhysodesmus garcianus, n. sp.
Rhysodesmus brachus Chamberlin
Rhysodesmus knighti Chamberlin
Rhysodesmus leonensis Chamberlin
Styraxodesmus chipinqueus, n. sp.

SAN LUIS POTOSI

Orthoporus leonicus Chamberlin
Rhinocricus lamprus, n. sp.
Rhinocricus potosianus Chamberlin
Pararachistes potosianus, n. sp.
Rhysodesmus potosianus Chamberlin
Amplinus xelitlus, n. sp.
Ilyma potosina, n. sp.

TAMAULIPAS

Orthoporus lenonus, n. sp.
Orthoporus mimus, n. sp.
Orthoporus victorianus, n. sp.
Hiltonius carpinus, n. sp.
Rhysodesmus viabilis, n. sp.
Rhysodesmus viabilis, n. sp.

GUANAJUATO

Orthoporus esperanzae, n. sp.
Orthoporus leius, n. sp.
Rhysodesmus esperanzae, n. sp.

HIDALGO

Cyphodesmus hidalgonus, n. sp.
Amplinus klugi Brandt
Sierresmus hidalgonus, n. sp.

VERA CRUZ

Orthoporus fortinus, n. sp.
Hiltonius veracruzanus, n. sp.
Messicobolus totonacus, n. sp.
Stemmiulus leucus, n. sp.
Cleidogona atoyaca, n. sp.
Rachidomorpha vicinus, n. sp.
Ceuthauxus cruzanus, n. sp.
Neoleptdoesmus dispersus, n. sp.
Rhysodesmus bonus, n. sp.
Rhysodesmus cumbres, n. sp.
Rhysodesmus pater, n. sp.
Rhysodesmus peratenus, n. sp.
Cruzodesmus ergus, n. sp.
Cruzodesmus browni, n. sp.
Cruzodesmus purojenus, n. sp.
Amplinus crenus, n. sp.
Orthomorpha gracilis (Koch)
Kalesmus eutropis, n. sp.
Cryptyma lobata, n. sp.
Eirenyma munda, n. sp.
Orthyma clara, n. sp.
Telauxus fractus, n. sp.

MEXICO

Platydesmus corzoi, n. sp.
Hiltonius crassus, n. sp.
Hiltonius erythrotypus, n. sp.
Hiltonius federalis, n. sp.
Tarascolus clarus, n. sp.
Rhinocricus ixtapanus, n. sp.
Diploiulus luscus (Meinert)
Blaiulus guttulatus (Bosc)
Nopoiulus minutus (Brandt)
Pheniulus mimeticus, n. sp.
Paraiulus rosanus, n. sp.
Cleidogona leona, n. sp.
Cleidogona rafaela, n. sp.
Rhysodesmus eutypus, n. sp.
Rhysodesmus frionus, n. sp.
Rhysodesmus guardanus, n. sp.
Rhysodesmus rubrimarginus, n. sp.
Rhysodesmus tacubayae, n. sp.
Peridontodesmus medius, n. sp.
Pinesmus setosus, n. sp.
Apsyma atopa, n. sp.
Polydesmus chapultepecus, n. sp.

PUEBLA

Platydesmus corzoi, n. sp.
Paraiulus pueblanus, n. sp.
Rhysodesmus eunis, n. sp.
Sphaeriodesmus griseus, n. sp.
Peridontodesmus parvus, n. sp.

MICHOACAN

Platydesmus cerrobius Chamberlin
Orthoporus mundus Chamberlin
Hiltonius tancitarus (Chamberlin)
Hiltonius michoacanus, n. sp.
Tarascolus bolivari, n. sp.
Cleidogona nueva michoacana Chamberlin
Zeuctodesmus ferrugineus, n. sp.
Tancitares michoacanus Chamberlin
Sakophallus simplex Chamberlin
Rhysodesmus elestribus, n. sp.
Rhysodesmus eusculptus Chamberlin
Sphaeriodesmus michoacanus Chamberlin
Maderesmus hoogstraali (Chamberlin)

MORELOS

Morelene mundus, n. sp.
Orthoparus morelus. n. sp.
Hiltonius carpinus, n. sp.
Hiltonius veracruzanus, n. sp.
Rhinocricus morelosus, n. sp.
Pheniulus phenotypus, n. sp.
Paraiulus zempoalus, n. sp.
Cleidogona zempoala, n. sp.
Ceuthauxus morelus, n. sp.
Neoleptodesmus dispersus, n. sp.
Rhysodesmus alpurjenus, n. sp.
Rhysodesmus elestribus, n. sp.
Rhysodesmus morelus, n. sp.
Rhysodesmus tepoztlanus, n. sp.
Rhysodesmus cuernavacae Chamberlin
Sphaeriodesmus prehensor Pocock
Orthomorpha gracilis (Koch)
Peridontodesmus morelus, n. sp.
Maderesmus tepoztlanus, n. sp.
Kalesmus phanus, n. sp.
Ilyma morela, n. sp.
Glomeris boneti, n. sp.

GUERRERO

Orthoporus ugmalanus, n. sp.
Orthoporus guerreronus (Chamberlin)
Rhysodesmus intermedius, n. sp.
Acentronus minor, n. sp.
Chondrodesmus nannus, n. sp.

TLAXCALA

Rhysodesmus malinche, n. sp.

CHIAPAS

Orthoporus chiapasus, n. sp.
Amplinus tapachulae, n. sp.
Amplinus vergelanus, n. sp.

INTRODUCED SPECIES

But few immigrant millipeds seem so far to have established themselves in Mexico. Of these the most abundant is *Orthomorpha gracilis* (Koch), a form probably East Indian in origin but now tropicopolitan in distribution. This species has been taken at various localities in Mexico. In the United States it is common in greenhouses and in the southern parts also occurs in the open. The following forms, taken by Dr. Bonet in Mexico City at Chapultepec Park, have unquestionably been introduced either directly or indirectly from Europe:

Diploiulus luscus (Meinert)
Nopoiulus minutus (Brandt)
Blaniulus guttulatus (Bosc)

These same species have long been established in the United States in all parts that have for long been settled and subjected to cultivation. They are still frequently brought in with potted plants, etc., from different parts of Europe as shown by numerous interceptions at quarantine.

Order COLOBOGNATHA

Family PLATYDESMIDAE

Genus PLATYDESMUS Lucas

Platydesmus corzoi, new species

Plate 1, fig. 1

Dorsum black with keels brick red. Venter reddish yellow, the legs yellow, sometimes dusky distally.

While this coloration suggests that described for *P. moreleti* (Lucas), it differs from the latter in the first tergite which does not form a straight line but has the anterior margin of the two halves form an obtuse reentrant angle at middle as shown in fig. 1. The head is not wholly covered.

Tubercles of tergites well developed, with the anterior series extending across keels to lateral margins, while the posterior series ends at bases of keels.

Sternites moderately broad.

Number of segments, 45-48.

Length, 17 mm.; width, 4.2 mm.

Locality.—D. F.: Rio Frio, August 17, 1941, four specimens collected by A. Hernandez Corzo, for whom the species is named; Desierto de los Leones, August 13, 1939, two taken by C. Bolivar, four young by Correa and Cardenas, March 22 and 24, 1941; and two by D. Pelaez, January 21, 1940.

Puebla: Rio Frio, October 1, 1941, six specimens taken by Correa, and many taken May 1, 1942, by Bolivar, Osorio and Pelaez.

Platydesmus cerrobius Chamberlin

Platydesmus cerrobius Chamberlin, Proc. Biol. Soc. Wash., 55, 1941, p. 57, fig. 1.

Locality.—Michoacan: Cerro Tancitaro, June 27, 1941. Several specimens, in part immature (H. Hoogstraal).

Order CAMBALIDA

Family CAMBALOPSIDAE

Genus MORELENE, new

Seemingly readily distinguished in having the segmental pores begin on somite 4. Apparently nearest to the genus *Tigolene* of San Clemente Id., from which also readily distinguished in having the borders of the anal valves sharply compressed and elevated. Eyes absent. Antennae with sixth joint conspicuously thickened. Collum acutely

narrowed on each side. Body moderately but distinctly constricted behind collum. Segments deeply constricted, entirely without longitudinal ridges or keels.

Gnathochilarum narrowed caudad, the lateral margin straight over most of length but convexly bulging toward distal end.

GENOTYPE.—*Morelene mundus*, new species.

Morelene mundus, new species

Plate I, figs. 2 and 3.

Brownish yellow, not annulate; repugnatorial gland showing along sides as a series of black spots. Antennae and legs yellowish.

Eyes absent, antennae with second, third and fourth articles slender, the second longest of these; sixth article much thicker than others with the fifth intermediate.

Collum acutely narrowed down each side with the lower end narrowly rounded and on a level with lower end of second tergite.

Segments immediately behind collum moderately constricted into a "neck". Ordinary segments with a deep furrow or constriction along segmental suture. Last tergite rounded behind and exceeded by the anal valves. Anal valves with inner border narrowly compressed and elevated, the elevated rim bearing a series of short setae.

Gonopods of male as shown in figs. 2 and 3.

Number of segments, 52.

Length, about 18 mm.; width, 1.2 mm.

LOCALITY.—Morelos: Oaxtepec, May 17, 1942, one male taken by C. Bolivar.

Order SPIROSTREPTIDA

Family SPIROSTREPTIDAE

Genus ORTHOPORUS Silvertri

The following key will aid in separating the species dealt with in this paper.

KEY TO SPECIES OF ORTHOPORUS

1 (6). Large forms in which the diameter of the body is 8 mm. or above 2

2 (3). Body marked with strongly contrasting rings of chocolate and yellow or buff color, the dark rings behind the segmental sulci....*O. torreonus*, n. sp.

3 (2). Color pattern not so 4

4 (5). Collum on each side with but 2 sulci above the margining one; diameter of body above 9 mm. ..... *O. leonicus* Chamberlin

5. (4). Collum with 4 or more sulci above the margining one; diameter about 8 mm. ..... *O. victorianus*, n. sp.

6 (1). Smaller forms in which diameter is 6 mm. or less 7

7 (16). Diameter of body near 6 mm. 8

8 (11). All sulci of collum simple and complete, extending fully across or nearly across the plate 9

9 (10). Typically four sulci on each side of collum in addition to margining one with caudal part of the lower three of these characteristically straight and longitudinal (Fig. 7) ..... *O. leius,* n. sp.

10 (9). Typically 2 sulci above margining one, these long oblique with caudal portion curved (Fig. 14) ..... *O. mimus,* n. sp.

11 (8). Some sulci incomplete, ending or beginning on middle area, sometimes branched 12

12 (13). Collum with a single interrupted sulcus (fig 10) ..... *O. mundus,* Chamberlin

13 (12). Collum with two or more incomplete or interrupted sulci 14

14 (15). Caudal border of segments lighter than middle annulus immediately preceding it; sulci of collum as in fig. 8 ..... *O. linares,* n. sp.

15 (14). Annulus over caudal border of segments darker than middle annulus; sulci of collum as in fig. 6 ..... *O. fortinus, n. sp.*

16 (7). Diameter of body 5.2 mm. or less 17

17 (18). Sulci of collum in part incomplete as shown in fig. 5 ..... *O. esperanzae,* n. sp.

18 (17). Not so, all sulci complete 19

19 (20). Dorsal surface of metazonites strongly roughened, with mostly longitudinal but in part branching and anastamosing rugae giving somewhat the appearance of longitudinal striation; collum with 4 principal sulci as shown in fig. 4 ..... *O. chiapasus,* n. sp.

20 (19). Not so 21

21 (22). Posterior border of metazonites and the covered part of prozonites beneath it black, the remaining exposed portion of segment bright chestnut or brick red ..... *O. ugmalanus,* n. sp.

22 (21). Not with this color pattern 23

23 (24). Cone of anterior gonopods of male unusually thick, as shown in fig. 17; segments in front of sulcus with color uniformly solid dark ..... *O. morelus,* n. sp.

24 (23). Cone of anterior gonopods much more slender, of more usual type; segment with dark color embracing sulcus 25

25 (26). Cone of anterior gonopods of nearly uniform thickness throughout, not acuminate, distally blunt; collum with 4 principal sulci ..... *O. guerreronus* Chamberlin

26 (25). Cone of anterior gonopods acuminate from base tc fairly acute tip; collum normally with 3 principal sulci (Fig. 11) ..... *O. lenonus,* n. sp.

Orthoporus chiapasus, new species

Plate I, fig. 4.

Segments back of segmental sulcus of each light brown or buff, in front of it abruptly darker, in part nearly black. Caudal area of last tergite and the raised ridges of anal valves black. Collum dark brown, with margins bordered with buff. Legs brownish.

Sulci of collum as shown in fig. 4.

Segments in front of sulcus smooth, with cross striae few and more or less vague. Behind sulcus strongly sculptured, the longitudinal striae sharply impressed nearly to level of pore, while across dorsum the longitudinal rugae between coarse punctae are conspicuously developed, giving a characteristic appearance of being striate over entire extent of metazonite. Last tergite not furrowed or striate. Anal valves smooth, the mesal borders unusually strongly elevated.

Number of segments, 59.

Diameter, 4.2 mm.

Locality.—Chiapas: Huixtla, January 1, 1940. One female taken under leaves in a meadow. (F. Bonet).

Readily recognized by the characteristic sculpturing of the metazonite.

Orthoporus esperanzae, new species

Plate I, fig. 5.

Ordinary segments with a black annulus embracing the sulcus with the border behind this light brown to golden in color. Last tergite also nearly black except for the border, and the anal valves in the type more dusky gray. Collum dark except a narrow border of light. Legs reddish.

Sulci of collum of the characteristic arrangement show in fig. 5.

Segmental sulcus deep throughout, beaded by cross ridges, opposite the pore more strongly curved in anterior segments than usual. Surface densely punctate, with punctae rather deeper and coarser than usual but even.

Number of segments in female holotype, 68.

Diameter, 5.2 mm.

Locality.—Guanajuato: Esperanza, October 26, 1941, El. 1500 meters. One female and one immature specimen. (C. Bolivar).

Orthoporus fortinus, new species

Plate I, fig. 6.

Color pattern nearly as in *ugmalanus*, but the general color of the exposed area of segments in front of the dark annuli brown rather than reddish brown ferruginous.

For the distinctive sulci of collum see fig. 6.

The segmental sulcus conspicuously more excurved opposite the pore than in *ugmalanus*.

Number of segments, 66.

Length, 90 mm.; diameter, 6 mm.

Locality.—Vera Cruz: El Fortin, September 19, 1940. One female (C. Bolivar).

Orthoporus guerreronus (Chamberlin)

Gymnostreptus (*Orthoporus*) *guerreronus* Chamberlin, Bull. Univ. of Utah, Biol. Series, vol. 7, no. 2, 1942, p. 8, figs. 1, 2.

Locality.—Guerrero: Cueva de Jutxlahuaca, January 15, 1941, four adult and several immature specimens. (F. Bonet).

Orthoporus leius, new species

Plate I, fig. 7.

The segments in the preserved type appear bluish gray excepting an annulus about caudal border of each, this being ferruginous. The last tergite and anal valves also of the gray color. Collum also dark, nearly black. Antennae and legs of light brown.

Form of wing of collum and of its striae shown in fig. 7.

Segmental sulcus deep and complete, well curved opposite the pore. Longitudinal striae in middle region of body not attaining level of pore by a considerable distance, but the series rising higher on anterior segments. Surface with characteristically very fine, not dense, punctae which are weakly impressed. Another narrow transverse furrow setting off caudal part of last tergite which is otherwise smooth excepting for the somewhat coarser punctae.

Number of segments, 71.

Diameter, 5.8 mm.

Locality.—Guanajuato: Esperanza, October 26, 1941, 2500 meters, one female. (C. Bolivar).

Orthoporus lenonus, new species

Plate I, figs. 11 and 12.

Color of body nearly black with annuli of reddish brown about the posterior borders of the metazonites, each annulus occupying less than half the distance from caudal margin to segmental sulcus. Last segment and anal valves black except for light line edging the last plate, the segments immediately preceding abruptly lighter, more reddish brown with black reduced. Legs nearly brick-red. Collum margined with lighter lines.

Collum smooth, with sulci as shown in fig. 11.

Segments with surface evenly finely punctate, as usual, not otherwise roughened. Sulcus complete, sharply impressed throughout. Longitudinal sulci complete in a series that does not fully extend to the pore, the internal usually occupied by 2 or 3 abbreviated sulci. Last tergite with caudal portion set off by the usual depression, surface more commonly punctate over caudal part of plate and over valves.

Gonopods as drawn. (Fig. 12).

Number of segments in male holotype, 75.

Length, about 85 mm.; diameter, 4 mm.

Locality.—Tamaulipas: 2 miles north of Lenon, July 15, 1942, one male (B. C. Brown).

Orthoporus leonicus Chamberlin

rthoporus leonicus Chamberlin, Ent. News. *52,* 1941, p. 252, fig. 8.

Localities.—Nuevo Leon: Garcia, July 14, 1942, four females (C. Bolivar and F. Bonet).

San Luis Potosi: Xelitla, June 15, 1942, one female. (B. C. Brown).

Orthoporus linares, new species

Plate I, figs. 8 and 9.

The general color is brown with on each segment a narrow chestnut-colored annulus behind level of pore followed by a broader light annulus over caudal border. Collum and adjacent anterior segments in type brown of a more chestnut cast. Legs chestnut. Last tergite and anal valves of yellowish red or orange cast, immediately preceding segments showing largely the same tint.

Form of lateral end of collum and arrangement of sulci as shown in fig. 8.

On ordinary segments the sulcus deeply impressed throughout, the pore widely separated from it as usual. Striae across metazonite complete up to or very nearly to level of pore. The usual transverse depression setting off distal part of last tergite, surface smooth as is that of the anal valves.

Gonopods as drawn. (Fig. 9).

Number of segments in male holotype, 73.

Length, about 100 mm.; diameter, 6 mm.

Locality.—Nuevo Leon: Linares, July 12, 1942, one male (B. B. Brown).

Orthoporus mimus, new species

Plate II, figs. 13 and 14.

Segments with annuli of brownish yellow or golden color about caudal border with an annulus of equal width between this and the sulcus of ferruginous color. In front of the sulcus the exposed part of segment is dark brown to nearly black. Legs ferruginous and antennae brown. Last tergite blackish except for light marginal line, and anal valves also blackish. Collum bluish except the borders.

Collum with lateral sulci as shown in fig. 14.

Segmental sulcus complete, deeply impressed. Longitudinal striae over metazonite complete up to or nearly to the pore. Surface above pores smooth except for the usual fine punctae. Last tergite with sulci or distinct furrows, the punctae somewhat coarser and deeper than on other segments. Anal valves without rugae or sulci.

Gonopods of male as drawn (Fig. 13).

Number of segments of male holotype, 75.

Length, about 108 mm.; width, 6 mm.

Locality.—Tamaulipas: 19 miles north of El Limon, June 14, 1942, one male (B. C. Brown).

Very close to *D. lenonus* in structure of gonopods, but the inner piece of anterior pair nearly square-cut across distal end instead of having inner angle produced farther caudad in the more usual manner. It is also a larger form with the sulci of collum differing as shown in the figures.

Orthoporus morelus, new species

Plate II, figs. 16 and 17.

Each segment normally marked with a reddish yellow annulus about caudal border, with remaining part chocolate brown to nearly black, the color ordinarily somewhat deeper in front of sulcus than behind it. Collum of the darker color in contrast with the head which is more of the reddish yellow cast. Last tergite and anal valves dark. Legs brown.

Form of wing of collum and its sulci represented in fig. 16.

Series of longitudinal lateral sulci with last 2 or 3 below pore not complete. A series of short sulci across dorsum, behind sulcus. Surface with punctae normal. Sulcus scarcely excurved opposite pore.

Gonopods of male distinctive (fig. 17).

Number of segments, 73.

Diameter, 4 mm.

Locality.—Morelos: Tepoztlan, April 22, 1941, El. 1650 meters, one male (C. Bolivar).

Orthoporus mundus Chamberlin

Plate I, fig. 10.

Orthoporus mundus Chamberlin, Proc. Biol. Soc. Wash., 55, 1941, p. 60, fig. 11.

Locality.—Michoacan: Apatzingan, La Majada, August 8, 1941. One female (Hoogstraal).

Orthoporus torreonus, new species

Plate II, fig. 18.

A large, conspicuously banded form in which the posterior portion of the somites is dark chestnut or chocolate colored and the anterior portion is brownish yellow or somewhat gold colored; last tergite of the lighter color excepting caudal border; anal valve also light or intermediate in color. Collum typically dark except anterior border. Head dark above, somewhat lighter below. Legs and antennae dark reddish brown or somewhat chocolate colored.

Head across posterior portion of vertex with irregularly broken impressed lines or striae. Median sulcus across vertex sharply defined to level of upper margin of antennal sockets; elsewhere the head smooth.

Collum smooth except for the usual margining sulcus on each side and 4 or 5 cross sulci the typical form and arrangement of which are shown in fig. 18.

On ordinary segments the segmental sulcus is distinct throughout its length, slightly and widely excurved opposite the pore which is separated from it by from once and a half to twice its diameter; series of longitudinal striae not reaching level of pore except on more anterior segments; surface of metazonites appearing smooth and shining but under the microscope showing numerous very fine punctae. Anal tergite and its triangular portion set off by a deep cross sulcus behind which roughened by other, broken sulci. Anal valves smooth except for a series of irregular cross rugae adjacent to the raised inner borders.

Length of female holotype, about 140 mm.; diameter, 9 mm.

Localities.—Coahuila: 20 miles southwest of Torreon, July 21, 1942, female holotype, two other adult females and five younger females; 15 miles southwest of Torreon, July 20, 1942, 7 females and an immature male; 15 miles west of Torreon, July 20, 1942, 12 females (B. C. Brown).

Orthoporus ugmalanus, new species

Plate II, fig. 19.

Color pattern distinctive in having the appearance of a narrow black annulus over the caudal border of each ordinary segment, the prozonite beneath this border black, with the rest of the segment dull red-ferruginous to ferruginous brown. Anal tergite black and anal valves brownish black. Collum brownish black with paler border. Legs ferruginous.

Form of lateral wing of collum and its sulci as drawn (Fig. 19).

Surface of tergites finely, evenly punctate. Segmental sulcus sharply impressed, but slightly excurved opposite pore. Series of complete longitudinal striae on each side not extending to level of pore. Anal tergite rising to a slightly longitudinal ridge along middle, without cross rugae or furrows.

Number of segments, 72.

Diameter, 4.2 mm.

Locality.—Guerrero: Ugmala, June 27, 1942, one female (Bryce C. Brown).

A second female, the locality label for which was lost, agrees fully with the holotype above described and has the rings of black even more pronounced in contrast with the dominating ferruginous brown.

Orthoporus victorianus, new species

Plate II, figs. 20-22.

Typically each segment is encircled by a broad, black band with a narrower yellowish brown band over the caudal border and a reddish line between the two; commonly also the segment is lighter colored over prozonite. Collum black with a reddish margining line. Head black excepting lower clypeal region which is reddish brown. Antennae light and legs reddish.

Vertex of head adjacent to colum with broken, irregularly branchlarly branching impressed striae; median sulcus extending to level of inner angles of eyes.

Collum smooth excepting for the deep lateral sulci which are of form shown in figs. 20 and 21.

On ordinary somites the segmental sulcus is deeply impressed throughout; widely and moderately excurved opposite the pore which is 3 to 4 times its diameter from the sulcus. Surface in general smooth but under lens showing the usual minute punctae; longitudinal striae on metazonite not reaching level of pores. Last tergite smooth except occasionally several wide but shallow transverse furrows on caudal portion, but these not always present.

Number of segments, typically 75, but specimens from Forlorn, which may represent a variety, have from 76 to 79.

Length of female holotype, about 125 mm.; diameter, 8 mm.

Locality.—Tamaulipas: 3 miles south of Victoria, June 14, 1942, male holotype, female allotype and five female paratypes. (B. C. Brown.)

Tamaulipas: 5 miles west of El Folorn, June 6, 1942, five females. (B. C. Brown).

Order SPIROBOLIDA

Family RHINOCRICIDAE

Genus RHINOCRICUS Karsch

Rhinocricus ixtapanus, new species

Plate III, fig. 23.

Apparently most nearly related to *R. aureocinctus* Pocock of Durango and *R. potosianus* Chamberlin of San Luis Potosi, but superficially readily distinguished from these in coloration. The segments are chestnut colored back of each segmental sulcus and the rest of the segment green. Legs brown.

Collum of usual form; second tergite extending well below level of end of collum, its lower edge horizontal behind, rising obliquely in front; anterior border not thickened.

Segmental sulcus of ordinary segments strongly developed throughout, strongly punctate up sides and across dorsum of most segments; contiguous with pore. Posterior division of tergite longitudinally striate only beneath.

Scobina of form shown in fig. 23. On middle segment scobina separated by more than twice the width of either, thus differing from both the species above mentioned in which the scobina begin on about the 9th segment and continue to about the 55th, becoming smaller and more widely separated in the posterior region.

Tip of last tergite free but much exceeded by the anal valves.

Number of segments, 60.

Length of female holotype, about 80 mm.; diameter 8.5 mm.

Locality.—Mexico: Ixtapan del Oro, one female taken under a stone June 8, 1941, by F. Bonet.

Rhinocricus lamprus, new species

General color dark olive with annuli of olive yellow, one caudad of each segmental sulcus, the covered part of prozonites of a similar light color. Collum olive with borders olive yellow. Anal tergite dark olive except a narrow posterior border. Anal valves also olive. Legs yellow.

Eyes widely separated, composed of about 27 ocelli in 5 transverse series; e.g., 7, 7, 6, 5, 2. Head with a median vertical sulcus distinct above and in clypeal region, absent in intervening region.

Collum widely rounded below with margining sulcus about inferoanterior part.

Segments smooth and shining. Sulcus deeply impressed throughout, conspicuously excurved opposite the pore which is separated by more than its diameter; no distinct secondary sulcus. Longitudinal striae on metazonites present only below, a wide space on sides below pores free from them. Caudal portion of last tergite meeting anterior portion at an angle.

Scobina with anterior lunate impression deep and wide, separated by about once and a half their width; striate area short and broad, well rounded behind. Scobina beginning on 9th segment and continuing to about the 42nd.

Anal valves with inner borders strongly compressed and elevated, as usual; much exceeding the last tergite.

Number of segments, 53.

Length, about 132 mm.; greatest width, 13 mm.

Locality.—San Luis Potosi: Xelitla, June 16, 1942, one female. (Bryce C. Brown).

Among known Mexican species distinguishable by its large size and coloration.

Rhinocricus morelus, new species

Plate III, figs. 24 and 25

A dark brown or chocolate colored form in which the color appears somewhat deeper about the caudal border. Antennae and legs of similar color.

Eyes widely separated as usual; ocelli flat, not easly separated, arranged typically in 5 series parallel to margin of collum; e.g., 9, 8, 7, 5, 3.

Second tergite extending beneath collum on each side, evenly convex below.

Segments with longitudinal striae only well below toward legs, elsewhere the surface marked with anastamosing fine impressed lines. Primary sulcus well marked throughout, the secondary sulcus mostly faint. Pore contiguous with sulcus as usual.

Last tergite with surface smooth; its acute caudal tip free for a short distance above the anal valves.

Scobina with lunate impressions rather small, deep, separated by about twice their width; striae very fine, the area narrowly rounded at caudal end, of moderate length; beginning as slight impression on segment 8, and extending to about segment 56.

In the male the coxal processes of 3rd and 4th legs stout, subcylindrical, distally rounded, not distally prolonged or slanting caudad as in *potosianus;* processes of the 3 following pairs of coxae more compressed in the anteroposterior direction.

Gonopods as shown in figs. 24 and 25.

Number of segments 62 in one specimen, 64 in three.

Length of male holotype, 105 mm.; diameter, 9 mm. Diameter of female allotype, 10.5 mm.

Locality.—Morelos: Cuernavaca, "Chapultepec," June, 1941. Four specimens of which the holotype is a male. (C. Bolivar and B. Osorio).

Rhinocricus potosianus Chamberlin

Plate III, figs. 26 and 27

Rhinocricus potosianus Chamberlin, Ent. News, 1941, 52, p. 252, fig. 9.

Localities.—Tamaulipas: 19 miles north of El Limon, June 14, 1942. Eighteen males and females, including holotype and allotype. Also 2 miles north of El Limon, June 15, 1942, one male; 3 miles south of Victoria, June 14, 1942, one male; 15 miles west of El Folorn, June 13, 1942, four specimens, and June 6, a male and female.

San Luis Potosi: Xelitla, June 15 and 16, 1942, four adult, three immature males and two immature females; Valles, 7 miles south of El Bonito, one female (holoype) taken June 26, 1940. (Hoogstraal and Knight).

Family ATOPETHOLIDAE

Genus HILTONIUS Chamberlin

Hiltonius carpinus, new species

Plate IV, figs. 34-36

When in full color dark, chocolate colored throughout, but sometimes prozonite lighter, giving an annulate appearance. Legs brown.

Ocelli moderately large, about 25 in number, arranged in 6 series; e.g., from above down, 2, 4, 5, 5, 4. Clypeal foveolae 5 + 5, the setae short, straight and black.

General form and relation of collum and second tergite as in *federalis*.

Segmental sulcus fine, conspicuously angled at level of pore the posterior half of which it embraces.

First two pairs of legs in the male moderately thickened; coxa of first compressed anterocaudally, that of the second moderately swollen, and compressed in such a way as to present the edge caudad, with ventral surface planate. Processes of third coxae uncate, with apex bent forward and vertical caudal edge compressed in anterocaudal direction and extended ventrad in low, distally rounded processes.

Distinct in details of gonopods which are represented in figs. 34, 35 and 36.

Number of segments in male holotype, mostly 45-47.

Length, 50-60 mm.; diameter, 6.2-8 mm.

Localities.—Tamaulipas: 2 miles south of Limon and also at Limon itself, June 24, 1942, numerous males and females, including the holotype and allotype. (Bryce C. Brown).

Morelos. Tepoztlan, elevation 1650 meters, August 22, 1941, in decaying log, one male collected by M. Correa and M. Cardenas; also one male taken May 10, 1941, by C. Bolivar and B. Osorio.

Hiltonius crassus, new species

Plate IV, fig. 37

A larger and proportionately thicker form than *tepoztlanus* and *federalis*. The body annulate with darker rings as in *tepoztlanus*, but these annuli not so dark in color, a rather light brown . Head and entire collum except a narrow posterior border light. Legs brown.

Ocelli rather large, sharply defined, arranged in 5 series; e.g., 3, 4, 5, 5, 4.

Clypeal foveolae 4 + 4.

Segmental sulcus sharply impressed; strongly angled at level of pore the upper edge of which it touches.

Processes of anterior legs of male as usual, but those of third legs with distal face shorter in anterocaudal direction. Coxae of second legs less flattened ventrally, presenting less of an edge caudally than, e.g., in *tepoztlanus*.

The posterior gonopods as shown in fig. 37.

Number of segments, 42.

Length, 57 mm.; width, 8 mm.

Locality.—Mexico: Ixtapan del Oro, one male taken under stones, June 8, 1941, by F. Bonet.

Hiltonius erythrotypus, new species

Distinguished among known species of *Hiltonius* and related genera in having most segments bright red excepting a narrow deep brown or blackish band about caudal border of each. Head and collum brown. Last tergite red anteriorly, dark posteriorly; anal valves reddish. Antennae and legs brown.

Clypeal foveolae 4 + 4. Eyes widely separated; subtriangular with apex mesal; ocelli about 30 in number arranged in 5 transverse series in which the ocelli decrease in size mesad, e.g., 5, 7, 7, 7, 4.

Collum with a long, sharply impressed anterior margining sulcus on each side, otherwise smooth.

Ordinary segments with sulcus fine but distinctly impressed throughout, smooth; contiguous with pore which it embraces on caudal side.

Last tergite very obtuse behind, exceeded by the anal valves. Valves smooth, with mesal borders forming a reentrant angle.

Number of segments, 43.

Length, about 50 mm.; width, 6.2 mm.

Locality.—D. F.: Santa Rosa, June 28, 1942. One female. (M. Cardenas).

A female from Rio Frio, D. F., taken September 17, 1941, by H. Corzo, may be a color variety of this species. The red color of the form above described is in this second specimen replaced by yellow except for a narrow red stripe or line immediately in front of the segmental suture on segments in front of the middle.

Hiltonius federalis, new species

Plate IV, fig. 38.

Body distinctly ringed with dark brown annuli, one behind each segmental sulcus, the remaining longer portion of each segment lighter brown. Legs brown, sometimes of a decidedly red cast.

Ocelli about 30 in 6 or 7 series. Clypeal setigerous foveolae 4 + 4, setae distally curved and rather long.

Collum strongly narrowed down each side as usual, the lower angle narrowly rounded, with the usual anterior margining sulcus but no others. Second tergite extending much below level of collum.

Segmental sulcus sharply impressed, bent a little forward against caudo-dorsal edge of pore. Surface of tergites, excepting the anterior striate covered portion, rather densely punctate, with fine striae running out from the punctae.

Anal valves extending beyond the last tergite, not margined, the inner borders reentrant as usual to form a median furrow.

Apparently quite distinct in details of male gonopods which are represented in fig. 38.

Processes of coxae of third and following legs in male much reduced in comparison with those of the gentoype, nearly as in *H. tancitarus* Chamberlin.

Number of segments, 41 and 44 in the two types.

Length, about 37 mm.; diameter, 5 mm.

Locality.—D. F.: Salazar, Elevation 3000 meters, a male and female collected by J. Alvarez, June 29, 1941; Tres Cumbres, elevation 3000 meters, two males taken under stones, June 15, 1941, by Correa and M. Cardenas.

Hiltonius michoacanus, new species

Plate IV, figs. 39-41.

Differing from *H. veracruzanus*, with which it is very closely related in the structure of the male gonopods, in not being distinctly banded, the body being uniformly dark brown or with the posterior border a little darker but the darker band narrow. Legs brown.

Segmental sulcus of tergites weak, obscure or absent across dorsum, in this respect contrasting with *veracruzanus*.

Gonopods of male very nearly as in *H. veracruzanus* but with apical hook differing as shown in figs. 39, 40 and 41.

Number of segments 48-49, as against 41-43 in *varacruzanus*.

Length of female allotype, near 57 mm.; width, 8.7 mm.

Locality.—Michoacan: 10 miles north of Zamora, July 10, 1942. Male holotype and female allotype. (B. C. Brown).

Hiltonius tancitarus (Chamberlin)

Eurelus tancitarus Chamberline, Ent. News, 53, 1941, p. 255, figs. 5-7.

Locality.—Michoacan: Tancitaro, on soil under rocks in moist woods, July 20, 1940. One male and ten females. (H. Hoogstraal).

Hiltonius veracruzanus, new species

Plate IV, figs. 42 and 43.

Conspicuously banded with strongly contrasting colors, each ordinary somite being solid black, or nearly so, behind the sulcus, this dark band passing down each side, and brownish yellow to orange colored in front of the sulcus. Collum, anal tergite and anal valves black. Legs brown or chocolate colored. Eyes widely separated as usual; the ocelli numerous, arranged in 5 or 6 transverse series, the series decreasing in length ventrad where the arc is pointed. Clypeal foveolas 4 + 4.

Collum of usual form on each side; much exceeded below by the second tergite.

Segmental sulcus deeply impressed; bent forward in a sharp angle against upper and caudal margin of pore. Anal tergite and valves of usual form, smooth.

Gonopods of male suggesting those of *H. federalis.* For details see figs. 42 and 43.

The coxal processes of the anterior legs of the male typical, presenting nothing clearly distinctive.

Number of segments, mostly 41 to 43.

Length, 40-50 mm.; diameter, 6-8 mm.

Localities.—Vera Cruz: 18 miles west of Perote, June 25, 1942, fifteen specimens of both sexes including holotype and allotype; also 10 miles north of Perote, June 24, 1942, three specimens. (B. C. Brown).

Morelos: Parque Nacional de Zempoala, May 13, 1940, at El. of 2800 meters, a male and female (C. Bolivar); also a male and female (301) taken by F. Bonet, October 5, 1941. The specimens from Morelos present slight differences in gonopods and may prove to represent a geographical variety.

Genus MESSICOBOLUS Brolemann

Messicobolus hoogstraali Chamberlin

Messicobolus hoogstraali Chamberlin, Ent. News. 53, 1941, p. 254, figs. 10-13.

Locality.—Nuevo Leon: Sabinas Hidalgo, Ojo de Agua, June 14, 1940, under damp rocks near a stream, "arid semi-desert," five males and one female. (H. Hoogstraal).

Messicobolus raui Chamberlin

Messicobolus raui Chamberlin, Bull. Univ. of Utah, Biol. Series, vol. 6, No. 4, p. 13.

Locality.—San Luis Potosi: Tamozunchale, El. 116 meters, one male taken by Phil Rau, in February, 1939, under a board in a banana field.

Messicobolus totonacus, new species

Plate V, figs. 44-46.

A distinctly banded form in which the segments behind the sulci are dark brown or chocolate colored and in front of them gray or the light bands across dorsum reddish yellow or orange. Last tergite brownish gray and the anal valves darker. Head reddish yellow below. Legs ferruginous red.

Eyes subcircular, of moderate size and widely separated, the distance between them being several times the diameter of an eye; ocelli black and distinct, arranged in 4 transverse series, e.g., 4, 5, 5, 4. Clypeal foveolae 4 + 4.

Collum strongly narrowed down each side; with the usual anterior submarginal sulcus on each side the border in front of which is raised. Second tergite produced below lower end of collum.

Ordinary somites characterized by having a fine but distinct secondary sulcus across dorsum a little in front of the primary sulcus, this secondary sulcus curving about the caudal side of pore and ending on the primary sulcus a little below level of pore. Surface of dorsum essentially smooth. Last tergite caudally rounded, smooth, exceeded by the anal valves.

Gonopods of male as shown in figs. 44, 45 and 46.

Coxal processes of anterior legs of male much reduced.

Coxal processes of anterior legs of male much reduced.

Number of segments, 43.

Length, about 47 mm.; width, 6.8 mm.

Locality.—Vera Cruz: Cumbres, June 21, 1942, male holotype and a smaller female. (B. C. Brown).

Distinguished from other known species in much smaller size and in the abortive coxal processes of anterior legs of male, etc.

Genus TARASCOLUS, new

Related to *Messicobolus* in the structure of gonopods. In the anterior pair the sternal plate is similarly abortive, thus differing from *Eurelus*, but the telopodite is apically simply prolonged, not incised or bilobed; coxal piece excavated on mesal side, a median membranous process expanding into these excavations. The posterior pair similarly small but with the telopodite constricted at base above which flaring into a flattened, cup-like form in which the rim is interrupted or absent on anterior side. Coxal processes of third legs not reduced or shortened but large, conspicuously expanded distally into a slipper-shaped lobe which is produced caudad over bases of third legs somewhat as in *Eurelus*. Claws of first two pairs of legs in male enlarged. Anal valves rounded, meeting in a reentrant angle, the inner borders not compressed and protruding.

Genotype.—*Tarascolus bolivari*, new species.

Tarascolus bolivari, new species

Plate V, figs. 47-50.

General color of body black, without any definite annuli of different color. Legs brown.

Clypeal foveolae 4 + 4. Eyes subquadrate, widely separated, with ocelli numerous and in about 6 subtransverse series; e.g., 4, 5, 6, 7, 6, 6.

Collum narrowed down sides; anterior border on each side somewhat elevated and set off by a sulcus. A few abbreviated striae on caudal border below. (Fig. 50). Second tergite extending but little below level of lower end of collum, its lower end a little convex.

A true segmental sulcus absent; but cross striae of prozonite sharply defined, parallel, not anastamosing above but furcate below on sides. Metazonites strongly and uniformly punctate above, with pore lying somewhat more than half way from caudal margin to most caudal of the striae. Last tergite with surface evenly punctate, without furrows or sulci, rounded behind, the caudal end even with valves. Anal valves evenly convex and punctate.

In the male the claws of the first two pairs of legs notably enlarged, but those of the immediately following pairs reduced.

Coxal processes of third legs expanded above a subcylindrical base into ventrally flat lamellae which are rounded in front and pointed behind where they extend over the coxal processes of fourth legs. (Fig. 49). Coxal processes of fourth legs lamellar, erect, distally pointed; those of fifth legs similar, while those of next two pairs of legs are obsolete.

Gonopods of male as shown in figs. 47 and 48. A membranous tongue-like process descending between anterior gonopods and apparently extending into the coxal pits.

Number of segments, 55.

Diameter, 4 mm.

Locality.—Michoacan: Zitacuaro, 1900 meters, July 13, 1941. Two males, one of which is the holotype, and a female. (C. Bolivar).

Tarascolus clarus, new species

Plate V, fig. 51.

Coloration as in *T. bolivari*, with features of head and collum also very similar.

Ordinary somites differing conspicuously from those of *bolivari* in presenting two distinctly marked sutural lines dividing each segment into three rings; the posterior running immediately in front of pore, with which contiguous; the anterior line farther forward near edge of band of encircling striae which are much less evident and fewer in number than in the genotype.

Anterior gonopods very close to those of *bolivari*, but posterior differing as shown in fig. 51. The median membraneous tongue between members of anterior pair typically shorter in the present species, but this may be subject to variation.

Number of segments, 49, and thus fewer than in the genotype.

Diameter, 3.6 mm. (♂) to 4 mm. (♀).

Localities.—D. F.: Santa Rosa, June 28, 1942, in pine woods, male holotype and two females (M. Cardenas), (561); Pedregal de San Angel, June 15, 1941, under stones, two males and two females. (J. Alvarez).

The specimens from Pedregal de San Angel are smaller than those from Santa Rosa, the maximum diameter being near 3.25 mm., but structural agreement in gonopods, etc., is complete so far as noted.

Genus TOLTECOLUS, new

Closest to *Arinolus* with which agreeing in general structure, although a much larger form. It differs in the male gonopods in having the stylus located at apical part of expanded distal lobe and recurved instead of arising from base of latter and being more or less erect. Claws of 4th, 5th and 6th legs in male reduced in size. The swollen anterior border of the collum may also be of generic value.

Genotype.—*Toltecus garcianus*, new species.

Toltecolus garcianus, new species

Plate III, figs. 30-33.

General color typically dark olive brown to nearly black, with paler lines margining the caudal border of metazonites light gray or nearly white. Legs chocolate colored or black.

Setigerous clypeal foveolae 5 + 5. Ocelli in each eye in 7 transverse series, sharply separated; e.g., 5, 7, 7, 6, 5, 4, 3.

Collum with anterior sulcus setting off a broad, elevated border which extends ventrad into a rounded process. (See fig. 31).

Second tergite not produced below lower end of collum.

Segmental sulci obscure across dorsum of somite, represented by a shallow furrow down the sides.

Last tergite broad, caudally rounded, with surface smooth. Anal valves rounded with a channel between mesal borders.

In the male the claws of the first three pairs of legs are enlarged, those of the next three pairs greatly reduced, and those of the seventh of intermediate size but not as large as the normal ones of subsequent pairs.

The coxal processes of the 3rd legs in male moderate in size, distal face presenting a caudally directed angle but not uncate. Coxal processes of next three pairs of legs flattened in anteroposterior direction, those of seventh pair less flattened.

Gonopods of the male as shown in figs. 30, 32 and 33.

Number of segments, 50 in both holotype and allotype.

Length of female allotype, 75 mm.; width, 8 mm. Diameter of male holotype, 7 mm.

Locality.—Nuevo Leon: Garcia, July 14, 1942. Male holotype, female allotype and two partly grown specimens. (C. Bolivar and F. Bonet).

Genus AZTECOLUS, new

Resembles *Onychelus* and *Hesperolus* in lacking coxal processes on the anterior legs of the male but differs from both in having none of the anterior legs with specially enlarged claws. It differs from these genera in having the mesal borders of the anal valves compressed and protruding and also in the gonopods of the male in that the telopodite of the latter presents a mesal branch or lobe. Anterior sternite of gonopods V-shaped, with the arms narrow.

Genotype.—*Aztecolus nigrior* Chamberlin.

Aztecolus nigrior (Chamberlin)

Plate III, figs. 28 and 29.

Spirobolus nigrior Chamberlin, Ent. News, 52, 1941, p. 253.

The body uniform black, without lighter annuli, with the antennae and legs similar.

Eyes large, separated by more than their diameter; ocelli sharply defined, arranged in 6 transverse series, e.g., 8, 9, 8, 8, 7, 5. Setigerous foveolae 4 + 4.

Collum strongly narrowed down each side but with the free ends well rounded. On each side a submarginal sulcus runs down the anterior border and curves below above the lower margin.

On ordinary segments the sulcus is continuous across dorsum as a fine, smooth, impressed line which is bent forward in a sharp angle opposite the pore. Prozonites marked with numerous close, partly anastamosing fine striae. Longitudinal sulci of metazonites present below but not extending to level of pore by a wide distance.

Last tergite smooth, much exceeded by the anal valves. Mesal borders of latter compressed and elevated.

Gonopods of the male as shown in figs. 28 and 29.

Number of segments, 54.

Length, 76 mm.; width, 7 mm.

Localities.—Nuevo Leon: Linares, June 12, 1942, one male (B. C. Brown); a male and female taken at same place in Canon de las Anahuas, July 19, 1942, by F. Bonet and D. Pelaez.

Nuevo Leon: Villa de Santiago, July 13, 1942, one adult male and an immature specimen (C. Bolivar, M. Maldonado, B. Osorio); Villa Santiago, in an arid plateau at elevation of 850 meters, one female (Hoogstraal and Knight); Ojo de Agua, Sabinas Hidalgo, twelve specimens, male and female, (Hoogstraal).

The description above is based on the male from Linares.

Order JULIDA

Family ISOBATIDAE

Genus BLANIULUS Gervais

Blaniulus guttulatus (Bosc)

1792. *Julus guttulatus Dosc.* Bull. d. I. Soc. philom. de Paris, p. 12.

1837. *Blaniulus guttulatus* Gervais, Ann. d. Sci. Nat., ser. 2, VII, p. 45.

Localities.—D. F.: Chapultepec Park, one adult and two partly grown specimens taken September 8, 1939, and one October 7, 1939, by F. Bonet; Mexico City, October 25, 1939. (F. Bonet).

Genus NOPOIULUS Menge

Nopoiulus minutus (Brandt)

1841. *Julus minutus* Brandt, Recueil, p. 89.

1841. *Julus pusillus* Say (Nom. Preocc. Leach, 1914) Jour. Acad. Sci. Phil., p. 105.

1851. *Nopoiulus punctulatus* Menge, Neueste Schi. d. Ges. Danzig, IV, Hft. 4, p. 7.

1868. *Blaniulus venustus* Meinert. Naturh. Tidlshr. 3 R., V. p. 20.

1887. *Julus lineatus* McNeill, Proc. U. S. N. M., X, p. 329.

Localities.—D. F.: Chapultepec Park, several specimens taken September 8, and October 7 and 13, 1939, by F. Bonet; also at Salazar, two specimens taken September 12, 1939, at an elevation of 3000 m. in leaves. Introduced.

Family PARAIULIDAE

Genus PHENIULUS, new

Differing from *Paraiulus* in having the telopodite of the posterior gonopods with 4 definite branches, one of which is typically furcate, instead of three. Superficially the two known species agree in having a broad, geminate yellow stripe along dorsum and in having tip of cauda moderately curved upward.

Genotype.—*Pheniulus phenotypus*, new species.

Pheniulus phenotypus, new species

Plate VI, figs. 59-61.

With a broad, geminate, yellow stripe along dorsum, this stripe in some of a decidedly reddish or orange cast the yellow color interrupted with darker marks. Each side of this dorsal stripe the color is black, the lower part of sides again reddish yellow. Legs yellow, under lens usually showing overlying darker markings, the antennae darker brown or blackish.

Collum in male of form usual in Mexican species, with a deep margining sulcus along lateral margin and continuing dorsad to level of eye; above and parallel with this a single short sulcus over caudal half only.

On ordinary segments the sulcus clearly impressed throughout, not angled or excurved opposite pore from which it is widely separated. Prozonite with numerous well marked encircling striae. Anal tergite with acute cauda considerably exceeding the anal valves, a little upcurled at the tip.

Readily distinguished by the form of the male gonopods as shown in figs. 59, 60 and 61.

Number of segments, 52-54.

Diameter, about 2.4 mm.

Locality.—Morelos: Oaxtepec, May 17, 1942, in channels in wood. Male holotype, two adult females and three young specimens. (M. Cardenas, M. Correa and J. Alvarez. No. 545).

Pheniulus mimeticus, new species

Plate VI, figs. 62 and 63.

The color pattern as in *P. phenotypus*, but the yellow of the dorsum in the type specimens has no reddish cast.

Collum and ordinary tergites nearly as in *phenotypus* with the last tergite having cauda similarly upcurled at the tip.

Distinct in the details of the gonopods of the male as shown in figs. 62 and 63.

Number of segments uncertain as the types are broken.

Diameter, 2.4 mm.

Locality.—D. F.: Ixtapan del Oro, June 8, 1941, under leaves in cultivated ground (Cafetal). A male and female. (F. Bonet).

Genus PARAIULUS Humbert and Saussure

Paraiulus pueblanus, new species

Plate V, fig. 52.

A dark brown or somewhat chestnut colored form which is of somewhat larger size than the preceding species.

The collum of the male has a single deep sulcus just above the lateral margining sulcus instead of the two present in *P. zempoalus*.

The species is most readily to be distinguished by the structure of the posterior gonopods in which the more distal prong of the telopodite is more curved than in *zempoalus*, etc., as shown in fig. 52.

Number of segments, 54-57.

Diameter, to 2.5 mm.

Locality.—Puebla: Rio Frio, May 1, 1942, at 3000 meters. Ten specimens of both sexes. (Bolivar, Osorio and Pelaez). One male taken August 17, 1941. (H. Corzo).

Paraiulus phloibius Chamberlin

Paraiulus phloibius Chamberlin, Proc. iol. Soc. Washington, vol. 55, p. 60, figs. 12 and 13, 1942.

Locality.—Michoacan: Cerro Tancitaro (Hoogstraal coll.).

Paraiulus rosanus, new species

Plate V, fig. 53-55.

Dark in color, black or nearly so, but typically with prozonite paler and often giving the appearance of nearly white annuli.

Collum in male with form and sulci as shown in fig. 53.

Segmental sulcus distinct throughout, obtusely angled at level of pore which lies within angle close to sulcus. Caudal tergite with cauda acute, straight, and widely surpassing the valves.

Anterior gonopods of male with inner or coxal piece dintinct from that of the preceding species in not expanding at all apically. Especially distinct in details of posterior gonopods as shown in figs. 55.

Number of segments, 49-51.

Diameter, near 2.8 mm.

Locality.—D. F.: Santa Rosa, April 28, 1942, in pine woods, seven females, three males (of which one is the holotype), and three partly grown specimens. (M. Cardenas).

Paraiulus schachti (Chamberlin)

Thriniulus schachti Chamberlin, Bull. Univ. of Utah, Biol. Series, vol. 6, no. 4, p. 20, figs. 35, 36, 1941.

Locality.—Michoacan: Tancitaro, El. 6,500 ft., July, 1940 (coll. F. Schacht).

Paraiulus zempoalus, new species

Plate VI, figs. 56-58.

General color bluish black with caudal border of segments with an annulus commonly of brownish cast.

In the male the collum rather long, with 2 sharply defined longitudinal sulci above margining sulcus of lower border.

Segments with encircling sulcus sharply defined throughout, widely excurved at level of the contiguous pore. In front of sulcus tergite marked with distinctly impressed encircling striae, in front of the sulcus with longitudinal striae up most of the way to the sulcus.

Anal tergite much exceeding the valves, the mucro straight and slenderly acute.

Gonopods of male illustrated in figs. 56, 57 and 58.

Number of segments in male holotype, 47.

Diameter, 2 mm.

The distinctive features of the gonopods of the male are shown in figs. 7, 8 and 9.

Locality.—Morelos: Parque Nacional de Zempoala. Elevation 3000 meters. An adult male (holotype) and male (allotype) and three immature specimens taken by F. Bonet on May 5, 1941, under logs and stones in woods of *Pinus* and *Abies;* also two adult females and three immature taken at 2800 meters, April 14, 1940, by C. Bolivar and D. Pelaez; numerous specimens taken May 31, 1942, by C. Bolivar, and one male May 19, 1940. (C. Bolivar).

This species may be readily separated from those previously described by obvious differences in the form of the coxal pieces of the anterior gonopods and especially by the details of the posterior gonopods as represented in the accompanying figures.

Family JULIDAE

Genus DIPLOIULUS

Diploiulus luscus (Meinert)

1868. *Julus luscus* Meinert, Naturh. Tiddskr; 3R., V. p. 9.

1887. *Julus owenii* Bolmann, Entom. Amer., II, p. 228.

1891. *Julus frisius* Verhoeff, Berl. Ent. Zeits., XXXVI, Hft. 1, p. 133, pl. 6 Figs. 17-21.

Locality.—D. F.: Chapultepec Park, several specimens taken September 3-8 and October 7-13 and 25, 1939, by F. Bonet. Introduced.

Meinert's types of *D. luscus* are a mixture of species including the one later named *owenii* by Bollman and *frisius* by Verhoeff. I believe that, from subsequent usage, we are justified in regarding the specimens of the present species to be the restricted types, The name *frisius* has been in recent years used; but if any grounds are found for rejecting *luscus*, then Bollman's name *owenii* must be used as having priority over *frisius*.

Order LYSIOPETALIDA

Family LYSIOPETALIDAE

Genus TYNOMMA Loomis

Tynomma messicanum, new species

Eyes composed of about 28 ocelli arranged in 5 series: 7, 6, 6, 5, 4.

Differing from the two previously known species, both occurring in California, in that on the collum the second seta from the middle line is not set well behind the first and third, the line of 10 setae being essentially straight. Collum with 16 crests, the three lateral crests on each side entirely crossing the length of the collum or nearly so, the middle ones equalling about half the length.

The transition to the full number of dorsal crests occurs on segment 12 as in *sedecimum*.

Number of segments, 56.

Length, about 22 mm.; width, 1.5 mm.

Locality.—Nuevo Leon: Chipinque, July 15, 1942. One female (C. Bolivar, F. Bonet, B. Osorio, and D. Pelaez. 576).

Order STEMMIULIDA

Family STEMMIULIDAE

Genus STEMMIULUS Gervais

Stemmiulus leucus, new species

Contrasting with the related *S. bioculatus* of Panama and Columbia in paler color and much smaller size. The general color yellow with a longitudinal dark brown or blackish band along dorsum and a somewhat brown stripe along each side. Last tergite and anal valves yellow.

Legs yellow. Antennae dusky yellow.

Antennae long, becoming gradually thicker distad. Ocellus large, on a dark area directly back of antennal socket.

Collum and following tergites of usual form.

Number of segments, 42.

Length, 9 mm.

Locality.—Vera Cruz: Atoyac, under leaves in tropical woods, November 13, 1941, five females, in part not mature (C. Bolivar and F. Bonet); also one taken May 30, 1941, by F. Bonet (331).

Order CHORDEUMIDA

Family PSEUDOCLEIDIDAE

Genus CLEIDOGONA Cook and Collins

Cleidogona atoyaca, new species

Plate VII, figs. 66-68.

Median dorsal brown area of metazonites rather narrow with each side of it a large transversely oblong light area covered with a network of brown lines; median brown area enclosing two small light areas about bases of middle pair of setae, but enclosing no anterior median spot. Lower part of sides, prozonites and caudal border of metazonites pale yellow. Legs also pale yellow excepting distal joints which are lightly marked with brown.

Ocelli in eye of male holotype in 5 series; thus, 6, 6, 4, 3, 2.

9th leg of male beyond first joint of nearly same form as represented for *C. rafaela;* details of first article of this leg uncertain, due to mutilation.

Tenth leg of male with coxal process as drawn. (Fig. 67). Coxa of eleventh legs of male with two apophyses present, the caudal of these somewhat transversely laminate (Fig. 68).

Gonopods of male as drawn (Fig. 66).

A smaller form than the others here described, the length of the male holotype being 10 mm. or somewhat less.

Locality.—Vera Cruz: Atoyac, under leaves in tropical woods, May 30, 1941. One male taken by F. Bonet.

Cleidogona leona, new species

Plate VII, figs. 69-72.

Color pattern nearly as in *morela.*

Eyes large as usual, the ocelli in 6 series; in the hale holotype arranged thus: 7, 6, 5, 4, 3, 2.

In the male the coxa of tenth leg characterized by its pronounced curvature, with upper end protruding on mesal side as shown in Fig. 71. The eleventh leg has coxa broadly bulging on mesal side distad of the apophysis, with the posterior process absent. (Fig. 72). Ninth leg of male illustrated. (Fig 70).

The gonopods of the male of form represented in fig. 69.

Length, about 15 mm.

Locality.—D. F.: Desierto de los Leones, March 22, 1941, two males and one female (Correa and Cardenas. 273); also one female taken July 14, 1941. (395).

Cleidogona zempoala, new species

Plate VI, figs. 64, 65.

Sides pale beneath, the upper part of sides and the dorsum nearly black; under microscope showing a transversely oblong paler area on each side of each tergite from the inner end of which area the middle seta arises, each other seta arising from a very small pale dot. Legs dusky yellow.

Ocelli numerous in a large triangular patch with apex down; arrangement of ocelli, e.g., 7, 6, 5, 4, 3, the ocelli decreasing in size from above ventrad.

Best distinguished from *nueva* of Nueva Leon in the form of the gonopods and 9th legs of male as shown in figs. 64 and 65.

Length, 11-13 mm.

Locality.—Morelos: Parque Nacional de Zempoala, elevation 3000 meters, woods of *Pinus* and *Abies*, one male taken May 5, 1941, by F. Bonet; also 6 specimens, including 2 adult males, taken March 21, 1943, by D. Pelaez.

Cleidogona nueva Chamberlin

Cleidogona nueva Chamberlin, Ent. News, 52, 1941, p. 250, figs. 1 and 2.

Locality.—Nuevo Leon. Sabinas Hidalgo, Ojo de Arua, June 14, 1940, in decaying wood outside of a cave at elevation of 430 meters. One male (K. Knight).

Cleidogona nueva michoacana Chamberlin

Cleidogona nueva michoacana Chamberlin, Ent. News, 53, 1941, p. 251, figs. 3, 4.

Locality.—Michoacan: Tancitaro, el. 216 meters, July 22, 1940, under log in damp ground. A male and female (H. Hoogstraal).

Cleidogona rafaela, new species

Plate VII, figs. 73-75.

In color pattern very similar to *C. morela*, but appearance of annulation not so pronounced.

Distinguished best by details of the gonopods of the male which differ conspicuously from those of *morela* (Fig. 73).

The 9th legs of male much as in *morela* (Fig. 74). Tenth legs of male with a large, distally sigmoidally curved or twisted apophysis from mesal side of coxa. The eleventh legs with a similar coxal apophysis and in addition a short, subacute process caudad of base of the first or anterior apophysis as shown in fig. 75.

Length, up to about 22 mm.

Locality.—D. F.: San Rafael, February 1, 1942, five specimens, including the male holotype (C. Bolivar).

Genus CAVOTA Chamberlin

Cavota crucis Chamberlin

Cavota crucis Chamberlin, Bull. Univ. of Utah, Biol. Series VII, no. 12, p. 8, figs. 3-7, 1942.

Locality.—Vera Cruz: Gruta de Atoyae, Nov. 11 and 12, 1941, and May 30, 1941. (Bonet and Bolivar.)

Order POLYDESMIDA

Family XYSTODESMIDAE

Genus RHYSODESMUS Cook

Rhysodesmus is undoubtedly the largest genus of diplopods occurring in the Mexican and Central American region. Most of the species are well localized, and the indications are that many species remain to be discovered and named. The following artificial key may aid tentatively in distinguishing the species herein considered.

KEY TO SPECIES OF RHYSODESMUS

1 (11). Metatergites not showing any distinct transverse band of different color between keels 2
2 (6). Keels light colored, reddish yellow behind a line running obliquely from anteroventral corner mesocaudad and dark in front of it; dorsum black 4
4 (5). Cauda entirely dark ..... *R. rubrimarginis*, n. sp.
5 (4). Cauda with distal portion light like keel ..... *R. morelus*, n. sp.
6 (2). Light color of keels not thus restricted, extending typically over anterior as well as caudal portion 7
7 (8). Dorsum light reddish brown or somewhat orange colored ..... *R. garcianus*, n. sp.
8 (7). Dorsum not of this color 9
9 (10). Width near 9 mm., dorsum strongly convex with keels moderate in width ..... *R. cumbres*, n. sp.
10 (9). Width near 11 mm.; dorsum much less convex, with keels broad ..... *R. pater*, n. sp.
11 (1). Metatergites with distinct transverse color bands 12
12 (27). Color band across posterior portion of metatergite darker than anterior region, this band occasionally limited by a pale line or very narrow stripe edging the posterior margin 13
13 (14). Sternites on segments from seventh on each with a pair of conspicuous spine-like processes projecting caudad from posterior margin ..... *R. viabilis*, n. sp.
14 (13). None of the sternites thus spined 15
15 (16). Width across metatergites near 9 mm., the keels broad and relatively high ..... *R. bolivari*, n. sp.
16 (15). Width of metatergites 8 mm. or less 17
17 (20). Metatergites when in full color posteriorly black or nearly so 18
18 (19). Keels bright orange or reddish colored; keels narrow and width of dorsum not over 6.25 mm. ..... *R. perotenus*, n. sp.
19 (18). Keels yellow over caudoectal half, broad and high; width of dorsum 7 mm. ..... *R. intermedius*, n. sp.

20 (17). Metatergites with the posterior band mostly rust-colored, brown or chestnut 21

21 (22). Posterior cross bands of same color as lateral borders of keels—rust colored ..... *R. guardanus*, n. sp.

22 (21). Posterior bands of tergites contrasting in darker color with keels 23

23 (26). Width of dorsum of female 7 mm. or more 24

24 (25). Keels narrow, and width across dorsum 7 mm. ..... *R. eunis*, n. sp.

25 (24). Keels broader and width across dorsum 8 mm. ..... *R. malinche*, n. sp.

26 (23). Width of female not exceeding 6.5 mm., (that of male 5.5 mm.); anterior pale portion of metatergites not clear, consisting of pale areolations in a network of brown; ventral surface of prozonites and commonly sternites below legs marked with spots or a broken network of brown ..... *R. frionus*, n. sp.

27 (12). Color band across posterior border of metatergites lighter in color than anterior portion of band, the light band sometimes limited behind with a darker marginal line 28

28 (37). Width 6 mm. or less 29

29 (30). Light colored cross bands of metatergites very broad in comparison with the dark areas of dorsum ..... *R. eutypus*, n. sp.

30 (9). Light colored cross bands of metatergites much narrower than the dark bands 31

31 (32). Sternites each with a pair of conical spines from posterior margin; width 4.5 mm. ..... *R. esperanzae*, n. sp.

32 (31). Sternites not spined; width 5 mm. or more 33

33 (34). Keels broad, high and horizontal; posterior lighter band of metatergites broad, reddish brown, contrasting sharply with keels; width, 6 mm. ..... *R. tepoztlanus*, n. sp.

34 (33). Keels narrower, low on sides and depressed; posterior band of metatergites lighter, concolorous or but little contrasting with color of keels, narrower; width 5.5 mm. or less 35

35 (36). Keels orange colored; width 5 mm. ..... *R. tacubayae*, n. sp.

36 (35). Keels and posterior stripe of metatergites yellow; width 5.5 mm. ..... *R. alpuyecus*, n. sp.

37 (38). Width, 7 mm. or more 38

38 (39). With near 17 mm.; light bands narrower than the dark areas ..... *R. elestribus*, n. sp.

39 (38). Width 10-11.2 mm.; light band of metatergites as broad as dark bands ..... *R. bonus*, n. sp.

Rhysodesmus alpuyecus, new species

Plate VIII, figs. 76, 77.

Posterior band of metazonites yellow, narrow, expanding at ends to cover keels excepting anterior portion, the line between light and dark area of keels running obliquely from distocephalic corner toward the proximo-caudal corner as in *elestribus*. The much larger anterior portion of metatergites brown as is the adjacent part of protergites but typically with a narrow yellow stripe or line along the sulcus setting off the prozonite; posterior part of brown region with color denser or more solid than anteriorly, a lighter, geminate medain spot commonly evident on anterior border of metatergite. Collum bordered with yellow as usual, the anterior part of this light border broader antero- posteriorly than the posterior band. Antennae brown, legs yellow distally, in some brownish or dusky over more proximal joints.

Ends of posterior margin of collum and of next few tergites but little bent forward. Outer part of posterior margins of keels from fifth or sixth segment incurved so as to leave the corner angular and in some degree produced. The keels in general of moderate breadth, depressed.

Sternites not specifically modified.

Gonopods as drawn (Figs. 76 and 77).

Length of male holotype, 26 mm.; width, 5.5 mm.

Locality.—Morelos: Alpuyeca, elevation 1250 meters, two males (including holotype), and three females taken June 14, 1942 (Bolivar and Santillano).

Rhysodesmus bolivari, new species

Plate VIII, fig. 78.

Each ordinary metazonite with a somewhat reddish brown or rust-colored band across posterior portion, this band extending out on each keel in front of caudal border; keels elsewhere yellow as is also anterior portion of the tergite. Tip of cauda yellow. Antennae dark and legs brownish yellow.

Posterior margin of collum bent strongly forward at ends. Posterior margins of the immediately succeeding keels also bent forward, that on those from third caudad concave toward outer end, thus leaving the corner in some degree projecting, the production more and more marked in going caudad as usual.

Sternites not spined and not incised.

Gonopods as shown in fig. 78.

Length, near 33 mm.; width, 9 mm.

Locality.—Nuevo Leon: Garcia. Two males taken July 14, 1942, by Bolivar and Bonet.

Rhysodesmus bonus, new species

Characterized by wide yellow bands across posterior portions of metatergites, each band occupying most of the tergite and continuous with the yellow area covering the entire keels; the remaining part of metatergites and the caudal part of the protergites chocolate colored. Borders of collum all around yellow, the rest chocolate colored. Cauda yellow. Head chocolate colored above, yellow below level of antennae Antnnae and legs yellow.

Collum with caudal margin strongly bent forward at ends; the outer end of keels lying somewhat in front of the median transverse line of the plate, well rounded.

Keels wide with the dorsum broad and but moderately convex. Posterior margins of anterior keels bent forward, those of 7th transverse or nearly so, and those of subsequent ones bent back in increasing degree.

Sternites smooth, with posterior margins simple, not spined or incised.

Length, 37 mm.; width, 11.25 mm.

Localities.—Vera Cruz: Fortin; one female taken September 17, 1940, by C. Bolivar.

Vera Cruz: Orizaba, one female taken July 28, 1939 (C. Bolivar, D. Pelaez).

Rhysodesmus brachus Chamberlin

Rhysodesmus brachus Chamberlin, Proc. Biol. Soc. Wash., 54, 1941, p. 63, fig. 3.

Locality.—Neuvo Leon: Sabinas Hidalgo, Ojo de Agua, June 17, 1940, "under rocks on escarpment," el. 500 meters, "arid semi-desert scrub." One male and two females (K. Knight).

Rhysodesmus cuernavacae Chamberlin

Rhysodesmus cuernavacae Chamberlin, Canad. Ent., 1942, p. 92, fig. 1.

Locality.—Morelos: Cuernavaca, July 10, 1940, one male (Phil Rau).

Rhysodemus cumbres, new species

Plate VIII, figs. 79 and 80.

Metazonites, excepting on last few segments, solid black, those of last few segments being chestnut to light brown; prozonites when exposed contrasting by their light brownish yellow color. Keels yellow excepting at base. Antennae dark brown, and legs brownish yellow.

Anterior margin of collum with wide median portion weakly convex, the end portion more strongly convex and continuous with lateral margins in an even curve; ends rounded. Posterior margins of keels of other anterior tergites bent forward, gradually becoming transverse in going caudad; posterior corners distinctly produced only on last few segments. Dorsal surface of metazonites rugose, the rugae forming an irregular network, the rugae most strongly marked over and toward basal portion of keels.

Caudal border of sternites of 17, 18 and 19th segments conspicuously angularly excised.

Gonopods of male as shown in figs. 79 and 80.

Length of male holotype, 45 mm.; width, 9.5 mm.

Locality.—Vera Cruz: Cumbres, male holotype and female allotype taken June 21, 1942, by Bryce Brown.

Rhysodesmus elestribus, new species

Plate IX, figs. 87 and 88.

Posterior transverse bands of metatergites yellow or brownish yellow, sharply defined, continuing on keels which are clearer yellow excepting antero-proximal portion. The remaining portion of metater-

gite and the contiguous protergite brown or somewhat chestnut. Collum with a yellow bordering band all around, this band widest on anterior side. Cauda yellow. Head dark brown above, lighter brown between and below antennae in front, with most clypeal region yellow. Antennae brown and legs yellow.

Posterior margin of collum moderately curved forwards at ends. The posterior margin of 2nd to 5th keels but little bent forwards, those of 6th or 7th strictly transverse, and succeeding ones being bent back gradually more and more as usual.

Sternites not specially modified.

Gonopods as shown in figs. 87 and 88.

Length of male holotype, about 32 mm.; width, 7.2 mm.

Localities.—Michoacan: Elestribo. Male holotype and female allotype taken June 24, 1940, at 2400 meters elevation by C. Bolivar.

Morelos: Tepoztlan, a male and female (paratypes) taken July 13, 1941, by E. Ortega.

Rhysodesmus eusculptus Chamberlin

Rhysodesmus eusculptus Chamberlin, Proc. Biol. Soc. Wash., 54, 1941, p. 64, fig. 4.

Locality.—Michoacan: Tancitaro, el. 2166 meters, under rocks in moist woods, July 20, 1940. Two males and two females (H. Hoogstraal).

Rhysodesmus esperanzae, new species

Plate XI, figs. 111 and 112.

Posterior portion of keels and a narrow band along caudal border of each metatergite yellow; in front of this narrow band a broader brown band with anterior portion of tergite also brown but this not solid, a yellow background showing through the irregular brown network. Prozonites also yellow, in part marked with brown. Antennae yellow except distal two articles which are brown. Legs yellow.

Posterior margins of first few keels curving forwards but little, concave and with outer corners in some degree projecting from 4th segment caudad.

Sternites with a short, conical spine projecting from each end of caudal margin.

Gonopods as drawn (Figs. 111 and 112). The tooth on mesal side of telopodite is distinctive.

Width, 4.5 mm.

Locality.—Guanajuato: Esperanza, two males taken September 26, 1941, at an elevation of 2500 meters, by C. Bolivar.

Rhysodesmus eunis, new species

The metatergites above each with a transverse brown band across posterior portion, this band extending on each side over the keel to the yellow lateral border. The remaining portion of metatergite and the prozonite light grey or yellowish grey. Collum brown except the paler limiting borders. Antennae yellow except the last two articles of which the terminal is wholly reddish and the penult reddish except at base. Legs and cauda yellow.

Collum differing in form in having the posterior margin less bent forward at end and the antero-lateral margin accordingly more strongly bent caudad. Also differing in having the posterior margins of anterior keels less bent forward and those from fifth or sixth running caudad of ectad, with posterior corners more and more prominent or produced in going caudad from this level. Dorsum smooth and shining, strongly convex and with keels low and narrow.

Sternites unarmed, not excised posteriorly.

Length, about 36 mm.; width, 7 mm.

Locality.—Puebla: Volcan Orizaba at 3,000 meters, one female taken May 31, 1940 (Bolivar and Pelaez).

In coloration this species also much resembles *R. frionus* but is a smaller form.

Rhysodesmus eutypus, new species

Plate VIII, figs. 81 and 82.

Nearly entire metatergite, including keels of ordinary segments light grey or yellowish white, a narrow chocolate colored stripe across anterior border and adjacent part of prozonite. Head light colored excepting top which is a light chestnut. Antennae brown or light chestnut, and legs yellow.

Posterior margin of collum but moderately bent forwards at ends, the lateral ends of keels lying well behind the middle transverse level.

Keels narrow and dorsum moderately strongly convex. Posterior margin of keels of second, or second and third, segments but slightly bent forwards, those of the others of anterior and middle segments transverse, the margin farther back being bent back as usual.

Sternites normal.

Gonopods of male shown in figs. 81 and 82.

Length of female allotype, about 31 mm.; width, 6 mm. Length of male holotype, about 25 mm.; width, 5 mm.

Localities.—Mexico: Los Berros, El. 2500 meters, male holotype and female allotype taken June 22, 1940, by C. Bolivar.

Also D. F.: Desierto de los Leones, three males and three females taken September 13, 1939, by C. Bolivar.

Rhysodesmus frionus, new species

Plate XI, figs. 107 and 108.

Typically the metatergites are brown or chestnut, this color solid over posterior part but anteriorly reduced to a network in the area included by which the color is light grey or blue-grey like the color of prozonites; posterior margin narrowly bordered with yellow; the outer portion of each keel when in full color orange. Tip of cauda also yellow or orange. Collum brown with keels and a narrow anterior and posterior border yellow. Head dark excepting clypeal and labial area which is yellow. Antennae distally deep brown, becoming paler proximally. Legs yellow.

Collum with posterior margin straight excepting toward ends where but little curved forwards about the rather broadly rounded ends; anterior and lateral margins forming a continuous convex curve in which the middle portion is less strongly curved.

Dorsum strongly convex with keels narrow and depressed. The posterior margins of keels of the second and third segments but little bent forwards at ends, the margin of third slightly transverse. On the following segments the posterior margins of keels are convex and become, in going caudad, gradually directed more and more caudad of ectad.

Sternites smooth and not posteriorly excised except on last segments where moderately angularly excised.

The gonopods of male as shown in figs. 107 and 108.

Length of male holotype, about 31 mm.; width, 5.5 mm. The width of the female allotype is 6.5 mm.

Localities.—D. F.: Rio Frio, August 17, 1941, two males (one of which is the holotype) and the female allotype (H. Corzo), and four male and female paratypes taken May 1, 1942 (Correa and Cardenas); San Rafael, 2700-3000 meters, one variant female, probably this species, taken by Bolivar February 8, 1942.

Puebla: Rio Frio, May 1, 1942, six paratypes, males and females (Bolivar, Osorio and Pelaez).

Rhysodesmus garcianus, new species

Plate IX, figs. 91 and 92.

Light brown of orange cast, prozonites paler; outer portion of keels yellow; typically median dorsal dark line shows. Antennae dark brown, not of reddish cast, and legs yellow.

Anterior margin of collum evenly slightly convex from end to end, the posterior margin more strongly convex; ends narrowly rounded.

Keels of second to fourth tergites evenly convexly rounded; beginning with fifth tergites the posterior corners of keels become more

and more angular, and those of posterior region produced as usual, all distally rounded. Posterior margins of keels convex.

Gonopods of male as shown in figs. 91 and 92.

Length, about 22 mm.; width, 5.5 mm.

Locality.—Nuevo Leon: Garcia, four males taken July 14, 1942 (Bolivar and Bonet).

Rhysodesmus guardanus, new species

Plate VIII, figs. 83 and 84.

The types are pale excepting a characteristic rust- colored transverse band across caudal border of metatergites, this band extending upon the keel on each side and bending forward over the lateral border of the latter. Antennae brown. Legs yellow, most with a weak rust-colored tinge.

Collum of usual general shape; posterior margin bent forward at ends but moderately, the end angle of keel being farther caudad than usual.

Posterior margins of anterior keels bent moderately forward. Posterior angles of keels projecting beginning at fourth or fifth segment. Dorsal surface smooth, strongly canvex, keels of moderate width.

Sternites not spined and caudal border not incised except 19th and, less obviously, the 18th.

Gonopods as shown in figs. 83 and 83.

Length, about 30 mm.; width, 6.2 mm.

Locality.—Distrito Federal: El Guarda, July 13, 1941, three males and a female taken by C. Bolivar.

Rhysodesmus intermedius, new species

Plate IX, figs. 89 and 90.

General color of dorsum dusky brown or black, with prozonites and anterior portion of metazonites lighter; keels yellow over postero-ectal half. Distal half of cauda also yellow. Antennae dark brown and legs yellowish brown.

Collum with anterior and lateral margins forming an evenly convex line which is somewhat flattened at middle. Posterior margin somewhat arcuate, meeting lateral margin at each end in a somewhat acute angle which is produced moderately cauded.

Posterior angles of all subsequent carinae also produced in increasing degree in going caudad. Caudal margin of keels mesad of the angle straight, lying caudad of margin of middle portion of tergite.

Gonopods of male as shown in figs. 89 and 90.

Length, 32 mm.; width, 7 mm.

Locality.—Guerrero: Chilpanzingo, one male taken June 28, 1942 (B. C. Brown).

Rhysodesmus knighti Chamberlin

Rhysodesmus knighti Chamberlin, Proc. Biol. Soc. Wash., 54, 1941, p. 65, fig. 5.

Locality.—Nuevo Leon. Villa Santiago (Hacienda Vista Hermosa, Horsetail Falls), elevation 500 meters, June 16, 1940, "mesic temperate forest", one male, (Hoogstraal and Knight).

Rhysodesmus leonensis Chamberlin

Rhysodesmus leonensis Chamberlin, Proc. Biol. Soc. Wash., 54, 1941, p. 65, fig. 6.

Locality.—Nuevo Leon: Sabinas Hidalgo, Ojo de Agua, June 14, 1940, under rocks on escarpment, elevation 500 meters, "arid semi-desert scrub", one male (K. Knight).

Rhysodesmus malinche, new species

Plate IX, figs. 93 and 94.

The holotype, not in full color, has the keels entirely yellow. The dorsum between keels, on each segment has a reddish brown band, deepest in color, somewhat chestnut, along caudal border and decidedly darker than the keels; the tergite and prozonite in front of this band grey. Head chestnut throughout except labral border. Collum with lateral wings yellow, this color extending mesad on each side a short distance on anterior border; elsewhere dark. Antennae light chestnut, darker distally. Legs a lighter brown. Cauda yellow.

Keels rather wide and depressed with intervening dorsum strongly arched. Posterior margin of keels straight except adjacent to base and ectal toward caudal end.

Gonopods of male as shown in figs. 93 and 94.

Length, 34 mm.; width, 8 mm.

Locality.—Tlaxcala: Malinche, La Canada, elevation 2899-3300 meters, March 31, 1940, one male (C. Bolivar).

Rhysodesmus morelus, new species

Plate VIII, figs. 85 and 86.

The color pattern is identical with that of *rubrimarginis* except that the cauda is light colored like the keels instead of being entirely black; also the dorsum in the holotype and allotype is a dark chocolate brown instead of dense black, but the paratype is more nearly black, the keels in the types are more yellow than in *rubrimarginis* but give evidence of the same reddish pigment that was undoubtedly prominent in life.

The gonopods of the male are obviously different from those of *rubrimarginis* although of the same general type (See figs. 85 and 86).

Length of female allotype, about 38 mm.; width, 9 mm.

Locality.—Morelos: Tepoztlan, male holotype and female allotype taken June 21, 1941, by Correa, one female paratype taken at same place June 22, by Bolivar and one June 6, 1941, by Bolivar and Osorio.

Rhysodesmus potosianus Chamberlin

Rhysodesmus potosianus Chamberlin, Canad. Ent., 1942, p. 91, fig. 2.

Locality.—San Luis Potosi: Tamozunchole, two males (Phil Rau).

Rhysodesmus pater, new species

Plate X, figs. 97 and 98.

The holotype, which seems not to be in full color, has the dorsum between keels paler; the anterior tergites darker, more dusky, than the posterior; no transverse bands evident. Antennae and legs yellow.

The keels are broader than usual, the whole body being broader than in most species, (the length being about 3.8 times longer than the greatest breadth). Anterior margin of collum with median portion conspicuously more convex than the lateral. Keels over entire surface above under microscope appearing decidedly more rugose than the dorsum between them on each metazonite.

Sternites posteriorly moderately concave or with margin forming a very obtuse angle. Last sternite with caudal margin short and evenly straight; the tubercles small, not much protruding.

The gonopods of male in ventral view evenly curved and crossing at middle line; telopodite broad, distally rather abruptly acuminate as shown in fig. 97; spur comparatively stout (See further fig. 98).

Length, 44 mm.; width, 11 mm.

Locality.—Vera Cruz: Near Fortin, male holotype taken June 19, 1942, by Bryce C. Brown.

Rhysodesmus perotenus, new species

Plate IX, figs. 95 and 96.

When in full color the metatergites are black excepting for a narrow line or edge along the caudal border which is yellow, and the keels which are orange. Prozonites above are white or yellowish white except for a dividing mid-dorsal dark area and one of similar color on each side in line with and beneath keels from where extending in a tongue-like band ventrad toward legs. Cauda distally orange. Collum with ends of keels orange and a narrow light band along both anterior and posterior borders. Legs dusky or black over yellow which is covered irregularly. Head dusky excepting a more yellowish light band between bases of antennae and a similarly light clypeal border; antennae dusky chestnut. Sternites dusky over yellow.

Collum with anterior margin evenly continuous with the lateral margins with middle portion less convex; the posterior margin obviously less convex; the ends well rounded.

Posterior margins of keels of anterior tergites running a little forward from base; posterior angles of all keels except on most posterior segments rounded, not produced. Dorsal surface of tergites smooth, or nearly so, and shining.

Gonopods of the male as shown in figs. 95 and 96.

Length of male holotype 34 mm.; width, 6.2 mm. Length of female allotype 37 mm.; width, 7 mm.

Locality.—Vera Cruz: 18 miles north of Perote, June 6, 1942, four males and two females (Bryce C. Brown); also two females taken at Perote on June 24, 1942, by Mr. Brown.

Rhysodesmus rubrimarginis, new species

Plate X, figs. 99 and 100.

Well characterized by its color pattern. The head and dorsum solid shining solid black, with the carinae in preserved specimens at present bright orange red,—probably clearer red in life; cauda entirely black. The red color on ordinary carinae extending mesad in a pointed band along caudal border. On collum the red color extends in a narrow band along anterior border and extending entirely across the plate (♂ holotype) or interrupted in middle region (♀ allotype). Antennae and legs brown. Sides and venter also brown.

Collum with anterior margin over middle portion only slightly convex, more strongly convex laterally where it curves evenly about the rounded ends. Dorsum in general smooth and shining, rugae being but slightly indicated. Keels of moderate width, the length of body being 4.5 or more times as long as greatest breadth. Posterior margins of keels but slightly curved forward on second and third segments; posterior corners more or less produced from 5th segment caudad, those on caudal segments conspicuously extended as usual.

Telopodites of male gonopods long, with basal portions subcylindrical and subparallel, the narrowed distal parts meeting at apices but typically not crossing. (See figs. 99 and 100.)

Length of female allotype about 36 mm.; width, 8.5 mm.

Locality.—D. F.: Tacubaya, July 17, 1942, male holotype and female allotype, taken by C. Tellez.

Rhysodesmus tacubayae, new species

Plate X, figs. 101 and 102.

Posterior pale cross bands on metatergites yellow and very narrow; in front of this a brown band, in some cases showing a reddish or orange tinge, the band narrowest at middle and expanding at ends which lie on and adjacent to base of keels; anterior part of metazonites

and the prozonites lighter, grey or yellowish grey. Outer portion of keels orange. Collum with light border narrow. Head brown above and down front to clypeal region, the brown area interrupted by a pale transverse band at level of antennae. Antennae yellow prnoximally, becoming brown toward distal end. Legs yellow, in part of orange tinge.

Collum with anterior and lateral margin forming a subsemicircular curve; posterior margin curving but little forward at ends.

Keels of ordinary segments very narrow. Posterior margin of keels of second and third tergites bending forward slightly, those of next two segments nearly transverse and the succeeding ones gradually running more and more caudad.

Gonopods of male as shown in figs. 101 and 102.

Length, about 25 mm.; width, 5 mm.

Locality.—D. F.: Tacuybaya, one male taken May 17, 1942, by C. Tellez.

Rhysodesmus tepoztlanus, new species

Plate X, figs. 103 and 104.

Anterior portion of metatergites and adjacent portion of prozonites black or nearly so; posterior band narrower, reddish brown in color; entire keels, or all except a small basal portion, yellow or orange yellow. Collum with anterior border and lateral wings yellow or orange, with no paler posterior border. Antennae blackish brown, the legs a lighter brown. Cauda entirely dark.

Keels wide, situated rather high on sides; posterior margins long and in front of middle all straight, with corners not produced, margins on those behind middle running but little caudad of ectad except to last few segments.

Gonopods as shown in figs. 103 and 104.

Length, about 27 mm.; width, 6 mm.

Locality.—Morelos: Tepoztlan, June 22, 1941, elevation 1650 meters, male holotype taken by C. Bolivar.

Rhysodesmus viabilis, new species

Plate X, figs. 105 and 106.

Above the metazonites are black in an area that covers entire length over middle but narrows at the ends to an acute point at the caudolateral corner of each keel, the anterior margin of the black area convex so that the area is sublunate in form; the thickened border of the keel also dark; the keel being elsewhere yellow, this color also extending some distance mesad in a narrow tongue along anterior margin of tergite. In younger specimens these anterior yellow tongues may unite at middle, giving a conspicuous transverse yellow band. Prozonites yellow, often of a reddish tinge. Collum black over posterior

portion, yellow in a transverse anterior band. Head black above, more chestnut in front below level of antennae and yellow in a narrow supralabial band. Antennae black or nearly so, the legs brown.

Collum with anterior margin straight or nearly so over middle region, on each side bent a little forward and then curving convexly to lateral end; posterior margin arcuate, bent strongly forward on each side to the end.

Posterior margin of second, third and fourth keels running conspicuously forward of ectad, with outer portion concave and the ectocaudal angles produced; the posterior margin on keels of middle and posterior region running more and more caudad of ectad.

Sternites of segments behind the seventh with a conspicuous spine projecting caudad from each end of the caudal margin adjacent to leg socket.

Gonopods of the male as shown in figs. 105 and 106.

Length, 35 mm.; width, 11 mm.

Localities.—Tamaulipas: 5 miles west of El Folorn, four adult males and several partly grown specimens taken June 16, 1942, and a female at same locality June 13, by Bryce C. Brown; also 3 miles south of Victoria, one female taken June 13 and 2 taken 5 miles south of Victoria on June 14, 1942.

Genus CRUZODESMUS, new

Differing from *Rhysodesmus* in the structure of the male gonopods. In these the telopodite is distally slender and simply acuminate, not spurred and not laminate, or but slightly so; accessory blade long and arising nearer base than in *Rhysodesmus*.

Genotype.—*Cruzodesmus ergus*, n. sp.

Cruzodesmus ergus, new species

Plate XII, figs. 117 and 118.

Both metazonites and prozonites above chocolate colored, the outer part of keels yellow. Antennae and legs yellowish, in part of red tinge. Head chocolate colored above, yellow below level of antennae.

Sulcus across vertex of head deep, ending in a pit between antennae.

Collum with anterior margin somewhat arcuate, the median portion more convex than the lateral.

Posterior margins of anterior keels bent conspicuously forward more or less incurved, the posterior corners thus angular and obviously produced on those from the fourth segment cauded. Dorsal surface of metazonites strongly longitudinally rugose, the rugae running from caudal margin well beyond middle on median portion of tergite; two transverse series of low tubercles on each side of metazonites, the

anterior having usually 6 tubercles on each side and the posterior two; the surface otherwise over keels and lateral portion of dorsum granular.

Sternites not excised posteriorly, at most a little concave.

Gonopods of male as shown in figs. 117 and 118.

Length, 51 mm.; width, 11 mm.

Locality.—Vera Cruz: Near Fortin, one male taken June 20, 1942, by Bryce Brown.

Cruzodesmus browni, new species

Plate XII, fig. 119.

Readily distinguished at sight from *C. ergus* in having a broad transverse yellow band across caudal border of each tergite, this band uniting with the yellow areas covering the entire keels. Anterior portion of metazonites between keels, and the prozonite dark chocolate colored. Legs yellow, the antennae yellow proximally, darker distally. Vertigial region of head chocolate colored, other parts yellow.

Sulcus across vertex of head distinct but not so coarse or deep as in *ergus*.

Collum and other tergites having same general form as in *ergus*. Contrasting with *ergus* in lacking the conspicuous longitudinal rugae over middle portion of metazonites and also lacking the seriate tubercles.

Gonopods of male very similar to those of *ergus*, but telopodite not so definitely angled within at base of terminal blade and the accessory spines relatively longer (Fig. 119).

Length, 37 mm.; width, 10 mm.

Locality.—Vera Cruz: Near Fortin. One male taken June 20, 1942, by Bryce C. Brown.

Cruzodesmus purojenus, new species

Plate XII, figs. 120-122.

When in color the dorsum is chestnut over caudal part of each prozonite, anterior part of each metazonite dark and in a narrow sublunate band on caudal border of each metazonite, the anterior band on metazonite widening from middle to lateral ends where terminating on a large dark area on base of keel. Metazonites between these dark bands yellow, as are the keels, except the dark area above mentioned. Collum chestnut with anterior and posterior borders yellow. Cauda yellow. Head yellow excepting vertex which is dilute chestnut. Antennae and legs yellow.

Collum with anterior margin gently convex, at ends rounding back abruptly and continuing as lateral margin to the rounded end. Caudal margin subarcuate, at ends bending strongly cephaloectad to the end.

Locality.—Vera Cruz: Puroje Nuevo, June 22, 1942, twelve specimens, male and female, taken by Bryce C. Brown; also El Fortin, September 19, 1940, one male not in color taken by Bolivar.

Genus ACENTRONUS, new

Differing from *Rhysodesmus* in lacking the characteristic distal spine or spur on telopodite of male gonopod and from *Cruzodesmus* in having the distal portion of telopodite laminate and subdeltoid in form; sperm duct opening at anterodistal corner of this lamina rather than at proximal or caudal corner.

Genotype.—*Acentronus minor*, new species.

Acentronus minor, new species

Plate XI, figs. 115 and 116.

When in full color the dorsum of both metazonites and prozonites are nearly black, the color across anterior portion o fmetatergite less solid than posteriorly and the prozonite often showing a lighter area on each side of middle; a very narrow transverse yellow line along caudal border of metatergite ending on each side in the narrow yellow border of the keel. This narrow lateral yellow border sometimes absent on part of the keels, the black of dorsum extending to the margin. Distal portion of cauda pale. Collum with a narrow yellow stripe along caudal border all the way across; a yellow stripe on anterior border commonly across only middle part. Head dark except the yellow clypeal area and sides. Antennae dusky brown or chestnut. Legs yellowish proximally, darker distally.

Collum strongly narrowed at each end, the posterior margin at each end concavely curved a little caudad and meeting the anterolateral margin at an acute angle.

On the following keels the caudal margin also curved more or less caudad, and the posterior corner angular and produced in some degree. Surface of tergites mostly smooth and shining, a little roughened toward base of keels by low tubercles and granules which are rather sparse.

Gonopods as shown in figs. 115 and 116.

Length, 22 mm.; width, 6 mm.

Locality.—Guerrero: Chilpanzingo, six males taken June 28, 1942, by Bryce C. Brown.

Caudal margin of keels of second tergite straight running forward of ectad; anterior corner strongly rounded, the posterior corner but slightly rounded. Caudal margins of keels of third and fourth segments straight and transverse. Posterior margin of following keels more and more strongly concave, with posterior corners produced in increasing degree in going caudad.

Gonopods of male as shown in figs. 120, 121 and 122.

Length, about 28 mm.; width, 6 mm.

Family RHACHODESMIDAE

Genus CEUTHAUXUS Chamberlin

Ceuthauxus morelus, new species

Plate XII, figs. 123 and 124.

Head, metazonites, antennae and legs green; the prozonites often lighter, light grey or whitish with a middorsal green mark.

Keels elevated as usual; caudal margin convex and keel widest across the middle of transverse length; pores directed upward, lateral margins smooth except for a denticle at anterior corner; dorsal surface smooth except for obsolete, widely separated minute tubercles traceable on some plates in the usual anterior row.

In the male the processes of coxae of second and third legs short, subconical.

Gonopods of the male as represented in figs. 123 and 124.

Length, about 44 mm.; width, 6 mm.

Locality.—Morelos: Tepoztlan, elevation 1650 meters, male holotype and paratype and three females taken July 6, 1941, by C. Bolivar; also one female taken at same place August 2, 1942, by Bolivar and Santillano.

Readily distinguished from previously known species except *cruzanus* in larger size.

Ceuthauxus cruzanus, new species

Green throughout as in *morelus*.

The keels are broader than in *morelus*, especially those toward anterior end and those in posterior region; elevated. The keels also differ in form in having the anterior corner more strongly rounded and lacking the conspicuous tooth present on anterior segments in *morelus*.

Length, about 48 mm.; greatest width, 7 mm.

Locality.—Vera Cruz: Near Fortin, June 10, 1942, one female taken by Bryce C. Brown.

The position of this species in *Ceuthauxus* rather than in *Pararachistes* is not certain since it is at present known from the female only.

Ceuthauxus nuevus (Chamberlin)

Pararachistes nuevus Chamberlin, Proc. Biol. Soc. Wash., 54, 1941, p. 63, fig. 2.

Locality.—Nuevo Leon: Sabinas Hidalgo, Ojo de Agua, elevation 500 meters, June 14, 1940, "in semi-desert scrub" under stones. A male and female (K. Knight).

Ceuthauxus palmitonus Chamberlin

Ceuthauxus palmitonus Chamberlin, Bull. Univ. of Utah, Biol. Series, vol. 7, no. 2, p. 12, 1942.

Locality.—Nuevo Leon: Gruta del Palmito, Bustamente, July 17, 1942. (Bolivar, Bonet, Osorio, Pelaez.)

Genus RACHIDOMORPHA Saussure

Rachidomorpha vicinus, new species

The general color red or reddish brown as described for *R. adunca* (H. and S.), a species undoubtedly very closely related.

Keels elevated, more strongly so in the male than in the female, with the posterior corners of all acute and extended caudad in typical manner; tooth at anterior corner prominent. Tergites with a well impressed transverse furrow across middle behind which a series of short longitudinal furrows define a cross row of elevated areas over posterior border, a tubercle-like prominence commonly at apex of each area.

Gonopods of male drawn in figs. 125 and 126.

Width of male holotype, 2.8 mm.; of female allotype, 3.2 mm.

Locality.—Vera Cruz: 18 miles west of Perote, June 25, 1942, male holotype and female allotype taken by Bryce C. Brown; also a male (paratype) taken 18 miles north of Perote on June 6, 1942, also by Brown.

These specimens were at first referred to *R. adunca;* but differences in the details of the male gonopods of the latter, as drawn from the holotype by Carl, would seem to necessitate separation.

Genus PARARACHISTES Pocock

Pararachistes galeanae, new species

Plate XII, figs. 128-129.

Color green throughout, including antennae and legs.

Seemingly set apart from previously known species in the form of the keels. Keels of the second and third segments bent but moderately forward, their posterior margins bulging but slightly, if at all, caudad of middle part of segment and these running essentially straight and forward of ectad, anterior margin on these and all other segments convex and extending well forward of middle part of segment, in this respect differing, e.g., from *elevatus* and *vertebratus*. On subsequent keels the posterior margins convex, and extending distinctly caudad of middle part of segment. Keels longest, anterocaudally, across, or a little proximad of middle, where longer across than middle part of segment. Outer margins of keels convex, with corners rounded, smooth

except for a slight denticle at anterior corner of altiore on anterior segments. eels in general notably narrow, especially in middle and posterior region, moderately elevated. Dorsal surface smooth. (See figs. 128 and 129).

Length, about 30 mm., width across second segment, 3.5 mm., across middle segments, about 3.2 mm.

Locality.—Nuevo Leon: Galeana, Laguna de Labradores, one female taken July 18, 1942 (C. Bolivar, F. Bonet, B. Osorio, D. Pelaez).

Pararachistes amblus Chamberlin

Pararachistes amblus Chamberlin, Bull. Univ. of Utah, Biol. Series, vol. 7, no. 2, 1942, p. 13, figs. 21, 22.

Locality.—Guerrero: Cueva de Juxtlahuaca, Colotipla, Jan. 16, 1941. (Bonet coll.)

Pararachistes potosinus, new species

Plate XII, fig. 127.

The color of the types appears to have faded in the preservative. The dorsum still has a distinct greenish tinge, with the legs yellow to brown, but these may have been green in life.

The species is distinguishable in the form of the keels. These are notably wider, especially on anterior segments, than, e.g., in the preceding species and *P. elevatus*, the genotype, and are clearly different in shape as shown in the figure. (Fig. 127).

Width across second segment of the holotype, 4.7 mm.; across eighth and following segments of middle region scarcely different.

Locality.—San Luis Potosi: Tamozunchale, several broken females taken by Phil Rau.

Genus NEOLEPTODESMUS Carl

Neoleptodesmus dispersus, new species

Plate XIII, figs. 130 and 131.

The general color is light brown or brownish yellow with keels, antennae and legs a clearer yellow.

Anterior keels broad with outer margin convex and both corners well rounded, becoming narrower in middle and posterior regions. Margins of all keels straight and essentially transverse excepting on the last few segments. Posterior corner becoming gradually more angular in proceeding toward posterior end of body.

Processes from coxae of second legs subcylindrical, a little thicker at free end, grooved on dorsal side, glabrous. Processes of third coxae directed cephalomesad, short, cylindrical, bearing long setae.

Gonopods of male as shown in figs. 130 and 131.

Length, 32 mm.; width, 4.5 mm.

Localities.—Vera Cruz: Puroje Nuevo, June 22, 1942, one male (holotype) and three females taken by Bryce C. Brown.

Morelos: Tepoztlan, 1600 meters elevation, August 9, 1942; about ten specimens of both sexes taken by Bolivar and Santillano; also Oaxtepec, May 17, 1942, a male and female taken by C. Bolivar, and a male taken May 12, 1942, by Correa.

In character of gonopods probably nearest *sumichrasti* (H. and S.) but an obviously larger form.

Genus TANCITARES Chamberlin

Tancitares michoacanus Chamberlin

Tancitares michoacanus Chamberlin, Proc. Biol. Soc. Wash., 55, 1942, p. 58, fig. 7.

Locality.—Michoacan: Tancitaro, Pedregal, elevation 2000 meters, June 28, 1941, several males and females (H. Hoogstraal).

Genus SAKOPHALLUS Chamberlin

Sakophallus simplex Chamberlin

Sakophallus simplex Chamberlin, Proc. Biol. Soc. Wash., 55, 1941, p. 59, figs. 8-10.

Locality.—Michoacan: Cerro Tancitaro, elevation 2600 meters, June 7, 1941, one male "taken on shrew carcass" (H. Hoogstraal and Traub).

Genus ZEUCTODESMUS Pocock

Zeuctodesmus ferrugineus, new species

Plate XIII, figs. 132-134

Superficially at once distinguishable from *Z. caeruleus* Pocock, the genotype and only previously known species, in its strikingly different color. This is in general a light ferrugineus, in part tending toward a cherry red over head and part of some tergites with antennae similar but legs yellow. No trace of the blue pigment characteristic of *caeruleus*.

The keels with backwardly directed acute angles as in *caeruleus*, with margins sigmoidal as shown in fig. 132.

Gonopods as drawn (Fig. 133 and 134).

Length of maximum female, 27 mm.; width, 7 mm.

Width of male holotype, 5.25 mm.

Locality.—Michoacan: Zitacuaro, elevation 1900 meters, July 13, 1941, male holotype and four females taken by C. Bolivar.

Family SPHAERIODESMIDAE

Cyphodesmus hidalgonus, new species

In general features agreeing with *C. mexicanus,* the genotype and only other known species of the genus. Differences existing, however, are such as to make reference to that species difficult, even allowing for the fact that the types of *hidalgonus* are not fully grown and consist of 19 segments. None of the segments possess the transverse crests described for *mexicanus,* the tubercles arising directly from the even surface of the posterior border. The tubercles of the last few segments are not spiniform as they are in *mexicanus.* Keels inferiorly truncate beginning with the 14th segment instead of the 13th.

Width of the largest specimen, 3.2 mm.

Locality.—Hidalgo: Chapulhuacan, April 5, 1942, 15 young in various stages taken by C. Bolivar and F. Bonet.

Sphaeriodesmus griseus, new species

Plate XVI, fig. 172.

The type in alcohol is light grey with a narrow caudal border on each segment appearing brown or pale chestnut.

Body robust and strongly convex, with surface of segments entirely smooth except for the series of short, closely placed, longitudinal striae across the caudal border of tergites.

Anterior rim of fourth tergite sharply raised on each side, that of the two preceding less conspicuously raised. Anterior margin of fourth keels widely convex and moderately extending forward of middle part of segment, the posterior margin concave and the posterior corner acute. In the fifth keels the posterior margin also concave but the exterior angle bluntly rounded. Posterior margin of 18th keels passing over into margin of middle part of segment in an evenly rounded angle.

Quite distinct from other known species in the form of the gonopods of the male. Beyond the coxae these are long, with the distal end curled strongly upward much as in *S. coriaceus.* It may also be distinguished from others by the presence and form of the accessory spur on inner side near middle of length. (See further fig. 172.)

Length, 24 mm.; width, 8.4 mm.

Locality.—Puebla: Orizaba Volcano at 300 meters, one male taken May 31, 1940, by C. Bolivar and D. Pelaez.

Sphaeriodesmus prehensor Pocock

Sphaeriodesmus prehensor Pocock, Biol. Centr. Americana, Chil. and Dipl., 1910, p. 121, pl., 8 figs. 9, 9a.

Localities.—Morelos: Oaxtepec, May 17, 1942, one specimen (Correa); Tepoztlan, September 2, 1942, elevation 1600 meters, two specimens (Bolivar and Santillano).

Sphaeriodesmus michoacanus Chamberlin

Sphaeriodesmus michoacanus Chamberlin, Biol. Soc. Wash., 55, p. 57, figs. 2, 3.

Locality.—Michoacan: Cerro Tancitaro, el. 2600 meters, July 21, 1941, under bark. One female (H. Hoogstraal).

Family EURYURIDAE

Genus AMPLINUS Attems

Amplinus crenus, new species

Plate XIII, fig. 136.

Head and dorsum dark chocolate colored with the thickened border of keels and the caudal portion of anal tergite yellow-brown. Sides chocolate colored and venter brown. Antennae and legs light brown.

Anterior tergites with 3 transverse rows of polygonal areas bearing numerous granules and mostly a larger median tubercle. On the more posterior tergites the tubercles become more prominant, more elongate, and arranged in five somewhat irregular, in part interlocking, series.

Lateral margins of keels smooth excepting a low blunt tooth at anterior corner, this lacking on the most posterior segments.

Anal tergite with caudal margin weakly convex, crenate, the number of crenatures 6, these notably more elevated or strongly marked than in *xelitlus*.

Gonopods in structure close to those of *xelitlus*, but inner distal prong smaller, less evenly curved, somewhat sinuous (Fig. 136).

Length of female holotype, about 73 mm.; width, 11 mm.

Localities.—Vera Cruz: Near Fortin, June 20, 1942, female allotype taken by Bryce C. Brown, also one male (holotype) and a partly grown specimen not in color taken August 19, 1940, by Dr. Bolivar, Vera Cruz: Puroje, June 22, 1942, female paratype taken by Bryce C. Brown.

Amplinus klugi Brandt

Amplinus klugi Brandt, Recueil, Mem. Myriap., 1841.

Amplinus klugi Pocock, Biol. Cen. Amer., Chil and Dipl., 1910, p. 152, pl. XI, p. 5-52.

Locality.—Hidalgo: Chapulhuacan, an adult female and a partly grown one taken April 5, 1942, by Bolivar and Bonet.

This seems to be the form referred by Pocock to Brandt's species, but it seems impossible to be sure of the latter until the type is re-examined and described more fully.

Amplinus tapachulae, new species

The metazonites above are chocolate colored, the prozonites notably darker, black or nearly so. Keels yellow over the widely thickened margins and in a narrow and variable stripe proximad thereof. Last tergite entirely dark. Antennae and distal points of legs somewhat chestnut brown, the legs lighter brown proximally.

Tergites marked with flat polygonal areas which are in three transverse rows on all the segments, the surface of the areas smooth.

Length, about 44 mm.; width, 6.6 mm.

Locality.—Chiapas: Tapachula, September 5, 1939, one adult female and two specimens not in color (Bolivar and Pelaez).

Amplinus vergelanus, new species

Dark chocolate colored, nearly black over head and entire dorsum, including keels excepting thickened margins which are in part usually a lighter brown. Legs and antennae of same color as dorsum. Brown on sides, a lighter brown beneath.

Dorsal plates tessellated, the furrows between elevated areas deep, these polygonal areas in three transverse series on all plates. Areas, especially on anterior part, of 19th tergite partly obliterated.

Margins of keels smooth and even.

Length, about 72 mm.; width, 11 mm.

Locality.—Chiapas: El Vergel, elevation, 800 meters, one female taken in October, 1939, by Bolivar and Pelaez.

Amplinus xelitlus, new species

Plate XIII, fig. 135.

Head and dorsum black, with the keels and caudal portion of anal tergite yellow. Prozonites also black on the sides, brown ventrally. Metazonites dark brown on the sides beneath keels, lighter brown ventrally. Antennae and legs brown, in this respect differing from *klugi*, with which closely allied, in which legs and antennae are yellow.

The sculpturing of tergites is in the form of strongly elevated, smooth tubercles of which there are three rows on the anterior segments, this number increasing to five rows on the posterior. The tubercles in shape are from elliptic to elongate, sublinear, mostly of the latter type.

Lateral edges of the keels smooth, not dentate, at most slightly sinuous. Anal tergite with caudal margin wavy, the crenatures low and broad.

Gonopods as drawn (Fig. 135).

Length of female allotype, about 78 mm.; width, 11.5 mm.

Locality.—San Luis Potosi: Xelitla, June 15-16, 1942, ten specimens, of both sexes, taken by Bryce C. Brown.

Family CHELODESMIDAE

Genus CHONDRODESMUS Silvestri

Chondrodesmus nannus, new species

Plate XIII, fig. 137.

The single type specimen seems not to be in full color and may have recently moulted. At present it is light yellow-brown with legs clear yellow.

The second and third keels are wide, half or more the width of the intervening metazonites, with the anterior margin long and gently convex, meeting lateral margin at a distinct angle at which there is a minute denticle. Behind these segments the keels become shorter and shorter with the anterior and lateral margins forming a single, even curve, with no denticle present.

Characterized especially by the form of the gonopods of male (Fig. 137).

Length, about 25 mm.; width, 3 mm.

Locality.—Guerrero: Chipanzingo, June 28, 1942, male holotype taken by Bryce C. Brown.

Suggesting *D. rodriguezi* Brolemann of Guatemala in the form of male gonopods but the principal branch more slender and the accessory branch less expanded distally; it is also a much smaller form.

Family STRONGYLOSOMIDAE

Genus ORTHOMORPHA Bollman

Orthomorpha gracilis (Koch)

Localities.—Michoacan: Morelia, three specimens taken under stones in an orchard, May 17, 1941, by F. Cortes; Zitacuaro, September 7, 1941, a number of males and females (C. Bolivar and A. Diez).

Morelos: Parque Nacional de Zempoala, May 5, 1941, one female taken under a stone (F. Bonet), and September 8, 1939, one male (F. Bonet).

Vera Cruz: Atoyac, four specimens, male and female (F. Bonet and C. Bolivar).

A tropicopolitan species introduced into Mexico where now well established. Common in hot-houses in the United States.

Family PERIDONTODESMIDAE

Pocock's judgment was sound in making *Peridontodesmus* the type of a distinct family (Biol. Centr.-Amer., Chilopoda and Diplopoda, 1910, p. 134). The indications are that this will prove to be a larger and taxonomically more diversified family than has heretofore

been assumed. The material examined in the present study includes eight new species among which four new genera are recognized on the basis of structural differences in the gonopods of the males. Two species represented in the collection by females only are for the present referred to *Peridontodesmus*, sens. lat., but may be otherwise placed when the males become known.

Genus PERIDONTODESMUS Silvestri

Peridontodesmus medius, new species

Plate XIV, figs. 138 and 139.

The general color light brown with head darker, antennae appearing nearly black and legs yellowish.

This species seems to be quite distinct in the form and arrangement of the teeth on the keels, particularly those of anterior segments as shown in fig. 138. The interval between 3rd and 4th teeth on second keels particularly shallow and not at all angular.

Length, 11 mm.

Locality.—Mexico: Ixtapan del Oro, in cultivated ground under leaves, June 8, 1941, one female taken by F. Bonet (350).

Peridontodesmus morelus, new species

Plate XIV, figs. 140-143.

This species approaches *P. flagellatus* Pocock of Guatemala in the large size of the anterior keels. For teeth of second and third keels see fig. 140. The features of the keels of middle region of body are shown in figs. 141 and 142, representing the eleventh and thirteenth keels.

Distinct in the gonopods of male the form of which is shown in fig. 143.

Length, 8 mm.

Locality.—Morelos: Chapultepec, near Cuernavaca. Secondary tropical forest. One mature male (holotype), one female and an immature specimen taken August 26, 1939, by F. Bonet.

In general features of the male gonopods this species approaches *P. electus* Chamberlin, for which Attems has proposed the genus *Trachyploeus*. It differs plainly in details, however, e.g., in the broader, distally thicker basal falciform distal division. Seminiferous branch similarly fringed distally.

Peridontodesmus parvus, new species

Plate XIV, fig. 144.

Characterized among known species by its small size and light reddish brown color.

The collum at each lateral end with two low, obtuse teeth as figured.

The lateral teeth of the anterior keels characteristically relatively narrower than, e.g., in *morelus* (Fig. 140), with the fourth tooth more nearly in a line with the first three (Fig. 144.)

Length of female holotype, 6.5 mm.

Locality.—Puebla: Villa Juarez, La Junta, August 22, 1941, under leaves, one female taken by D. Pelaez.

Genus KALESMUS, new

In the gonopods of the male resembling *Peridontodesmus* but telopodite at distal end of mesodorsal portion bearing three slender processes instead of two.

Genotype.—*Kalesmus phanus*, new species.

Kalesmus phanus, new species

Plate XV, figs. 150-152.

Resembling *P. medius* and differing from the other species of *Peridontodesmidae* here listed in the very narrow keels of the middle region of the body. Differing obviously, however, from *medius* in the form of the teeth of keels as shown in figs. 150 and 151.

Gonopods of the male as shown in fig. 152.

Length of male holotype, 8 mm.; of female allotype, 9.2 mm.

Locality.—Morelos: Parque Nacional de Zempoala, under stones and logs, May 5, 1941, three males and one female. (301).

Kalesmus eutropis, new species

Plate XV, fig. 153.

A pale brown form readily distinguished by the very broad keels which are relatively short anterocaudally. On the posterior margin of a typical keel there are four teeth in series proximad of the three on the outer margin. The usual transverse series of setigerous tubercles between which the surface is smooth.

The features of the gonopods of the male are shown in fig. 153.

Length of female allotype, 9 mm.; width, 2.4 mm. Length og male holotype, 7.5 mm.; width, 2.1+ mm.

Locality.—Vera Cruz: Fortin, January 15, 1942, in leaf mould in cultivated ground, one female, three males and two immature specimens, collected by F. Bonet. (471).

Genus SIERRESMUS, new

Outer branch of telopodite of gonopods of male not largely free as it is in *Maderesmus*, without claw-like terminal division but with a subapical angle or tooth. Inner branch curved, substyliform as in *Maderesmus* but simple, without an erect sublaminate dorsal division or shield. The keels of the tergites are unusually wide.

Genotype.—*Sierresmus hidalgonus*, new species.

Sierresmus hidalgonus, new species

Plate XIV, figs. 145 and 146.

Of the usual light brown color.

The form and disposition of the teeth of keels are shown in fig. 145. Teeth of caudal margin four, of which the most proximal is reduced. Keels moderate, narrower than in *eutropis*.

Distinct in the gonopods of male, represented in fig. 146.

Length, 9 mm.; width, 2 mm.

Locality.—Hidalgo: Chapulhuacan, April 5, 1942, under leaves, five adults, including the male holotype, and several young individuals.

Genus MADERESMUS, new

Characterized by having the inner branch of telopodite of male gonopods free, or largely free, well toward base, with the inner branch furcate, presenting a curved ventral stylus and an erect lamina or shield.

Genotype.—*Maderesmus tepoztlanus*, new species.

The genus at present includes also *M. hoogstraali* (Chamberlin), described from Michoacan (Proc. Biol. Soc. Washington, vol. 55, 1942, p. 58, fig. 6).

Maderesmus tepoztlanus, new species

Plate XV, fig. 148.

Distinct from *morelosus* especially in the details of the gonopods of the male. In these the terminal flagellum of the telopodite is proportionately much smaller, and the median lobe is distally acutely acuminate instead of bluntly rounded.

The keels and their teeth in general very similar to those of *morelosus*.

The color above is brown, with usually on each metazonite a lighter spot each side of the middle just behind the anterior series of tubercles.

Gonopods as drawn (Fig. 148).

Length of female allotype, 10 mm.; of male holotype, about 8 mm.

Locality.—Morelos: Tepoxtlan, elevation 1600 meters, one male (holotype) and five females taken August 2, 1942, by C. Bolivar and H. Santillano.

Maderesmus hoogstraali (Chamberlin)

Peridontodesmus hoogstraali Chamberlin, Proc. Biol. Soc. Wash., 55, 1941, p. 57, figs. 4-5.

Locality.—Michoacan: Cerro Tancitaro, elevation 2600 meters, June 7, 1941, "on shrew carcass." Two males and one female (Hoogstraal and Traub).

Genus PINESMUS, new

Similar to *Peridontodesmus* in having on the keels a series of prominent teeth continuous along lateral and caudal margins and forming an even curve on most segments. It differs from that genus in having 5 transverse rows of densely arranged setigerous granules on ordinary metazonites instead of three more or less widely separated series.

Genotype.—*Pinesmus setosus*, new species.

Pinesmus setosus, new species

Plate XV, fig. 149.

Light brown in color.

Collum rounded at ends; with an even series of rounded teeth or crenatures across anterior border, around ends and along posterior margins of keels; dorsal surface densely covered with setigerous granules or tubercles which form about 9 transverse series.

Posterior corners of keels of only 18th and 19th segments produced, those of 16th and 17th subrectangular, and all others rounded.

Along lateral and caudal margins of most keels a series of mostly 8 or 9 teeth.

Last tergite narrowing to a point behind, densely clothed with setigerous granules.

Gonopod of male represented in fig. 149.

Length, to near 11 mm.; width, near 1.8 mm.

Locality.—D. F.: Desierto de los Leones, July 13, 1941, in decaying wood in pine grove, three females (M. Cardenas and M. Correa); also two males (including the holotype) and one female (allotype) taken June 13, 1941, by the same collectors. (390).

Family ONISCODESMIDAE

Genus BONETESMUS Chamberlin

Bonetesmus verus Chamberlin

Locality.—Vera Cruz: Gruta de Atoyac, male holotype and female allotype taken November 11, 1941 (F. Bonet and C. Bolivar).

Family STYLODESMIDAE

For the purposes of the present paper and pending accumulation of material for an adequate revision it seems best to use this family name in the broad sense adopted by Attems and to range under it all the cryptodesmoid genera at present known from Mexico. These are given in the key below. Various family names (Stiodesmidae, Pyro-

godesmidae, Decaporodesmidae, Hercodesmidae, Ceratesmidae) that have been proposed include groups of these genera, but their limitations as they have heretofore been conceived seem unsatisfactory. More adequate material and more intensive study are needed.

KEY TO MEXICAN GENERA OF STYLODESMIDAE

1 (4). Most tergites bearing a pair of very large processes or horns, but lacking seriate tubercles 2
2 (3). Collum lacking horns; pores present on 9th segment ..... *Telauxus*, n. gen.
3 (2). Collum with a pair of well developed horns; no pores on 9th segment ..... *Ceratesmus* Chamberlin
4 (1). Tergites bearing no such horns but with series of tubercles 5
5 (12). Pores present on 7 or 8 segments 6
6 (7). No pores present on segment IX; present on segments V, VII, X, XIII, XVI, XVII and XIX ..... *Myrmecodesmus* Silvestri
7 (6). Pores present on segment IX 8
8 (9). Pores on 7 segments: V, VII, IX, X, XII, XIII and XV ..... *Psochodesmus* Cook
9 (8). Pores on 8 segments: V, VII, IX, X, XII, XIII, XV and XVI 10
10 (11). Collum with 12 scallops; lateral margins of keels 3 or 4 lobed; telopodite of gonopods freely exposed ..... *Yucodesmus* Chamberlin
11 (10). Collum with 10 scallops; lateral margins of keels 2-lobed; telopodite of gonopods largely concealed by enlarged coxae ..... *Synoptura* Attems
12 (5). Pores present on only 4 or 5 segments or absent 13
13 (16). All keels lacking porigerous processes 14
14 (15). Collum and keels deeply incised between lobes ..... *Cryptyma*, n. gen.
15 (14). Notches between lobes of collum and keels shallow ..... *Eirenyma*, n. gen.
16 (13). With distinct, pore-bearing processes 17
17 (18). Pores present only on segments V, X, XIII and XVI ..... *Styraxodesmus* Chamberlin
18 (17). Pores present also on segment VII 19
19 (20). Pores present only on segments V, VII, X and XIII ..... *Bolivaresmus* Chamberlin
20 (19). Pores present also on segment XV or XVI 21
21 (22). Pores on segments V, VII, X, XIII and XV ..... *Decoporodesmus* Kenyon
22 (20). Pores present on segments V, VII, X, XIII and XVI 23
23 (24). Tergites of segments XVII and XVIII each with a single very long, median process projecting caudad over the following segment ..... *Apsyma*, n. gen.
24 (24). With no such processes from segments XVII and XVIII 25
25 (26). Keels deeply incised, much as in *Cryptyma* ..... *Orthyma*, n. gen.
26 (25). Keels not thus deeply incised ..... *Ilyma* Chamberlin

Genus ILYMA Chamberlin

Ilyma morela, new species

Plate XV, figs. 154-156.

Tergites as usual appearing black because of fine adherent material. Antennae and legs nearly white.

Collum concealing the head in dorsal view, marginal crenatures separated by shallow incisions. Tubercles less prominent than in *colotlipa*.

The three marginal lobes or crenatures of second keels and the two of the following ones separated by depressions or incisions which, like those of the collum, are notably shallower than in the related *I. colotlipa*. Tubercles in the usual four longitudinal rows but the more lateral series but weakly developed; the submedian ones forming ridges which are notably higher on the posterior segments. Posterior end of the submedian dorsal ridges projecting caudad only moderately, the caudal ends being on a level with the crenatures of the 20th segment, in this contrasting decidedly with *colotlipa* in which the 19th segment projects widely beyond the 20th. For form relations of the 19th tergite see fig. 154.

Gonopods of male as drawn. (Fig. 155 and 156).

Length, 5.5 mm.

Locality.—Morelos: Parque Nacional de Zempoala, March 21, 1942, in soil of pine woods. An adult male and an immature specimen of 18 segments (D. Pelaez).

Ilyma colotlipa Chamberlin

Ilyma colotipla Chamberlin, Bull. Univ. of Utah, Biol. Series, vol. 7, no. 2, 1942, p. 9, figs. 8-10.

Locality.—Guerrero: Colotipla, Cueva de Juxtlahuaea, Jan. 16, 1941. (Bonet coll.)

Ilyma orizaba Chamberlin

Ilyma orizaba Chamberlin, Bull. Univ. of Utah, Biol. Series, vol. 6, no. 4, 1941, p. 24.

Locality.—Vera Cruz: One female taken at quarantine at Laredo, Texas, on orchids from Orizaba, July 29, 1940.

Ilyma potosina, new species

Plate XV, figs. 157 and 158.

Light yellow, to naked eye appearing dusky from presence of adherent material.

The posterior lobe of keels of anterior and middle regions having ectal and caudal margin together forming an even convex curve.

The 17th tergite completely concealing the 18th in dorsal view. (See further fig. 157.)

The holotype .5 mm. wide.

Locality.—San Luis Potosi: El Plutanito, April 5, 1942, under leaves, one female taken by F. Bonet.

While only body segments are present in the type, it is believed that the form of the keels as drawn will assure identification.

Genus APSYMA, new

Agreeing with *Ilyma* in having repugnatorial pores restricted to segments 5, 7, 10, 13 and 16 and in the general features of collum and keels. It differs, however, in having no median processes from 19th tergite projecting over the 20th, the latter, while reduced, being exposed a little from above; but both the 17th and 18th tergites have a conspicuous, long median process projecting cauded, that of the 18th extending entirely over the last two segments.

Genotype.—*Apsyma atopa*, new species.

Apsyma atopa, new species

Plate XV, fig. 159.

Color in general light horn brown, with the legs clear yellow.

The 10 crenatures of the collum as e.g., in *Ilyma*, but in one specimen there are but 9, due to fusion of the two last tubercles on one side.

Other tergites have the keels much as in *Ilyma colotlipa* but proportionately broader; shortest longitudinally across base which is somewhat constricted. Dorsal surface of tergites with three longitudinal series of larger tubercles on each side, three in each series, and a single, irregular series of lower tubercles between each two of these. Surface densely covered with short, even hairs, much as in *Ceratesmus*, these especially evident on the keels.

The form of the median processes of 17th and 18th tergites and the relations of the 19th and 20th segments are shown in fig. 159.

Length, about 5.2 mm.

Locality—Mexico: San Rafael at elevation of 2700-3000 meters, two females taken Feb. 1, 1942, by C. Bolivar.

Genus BOLIVARESMUS Chamberlin

Bolivaresmus sabinus Chamberlin

Bolivaresmus sabinus Chamberlin, Bull. Univ. of Utah, Biol. Series, vol. 7, no. 2, 1942, p. 10, figs. 14-17.

Locality.—San Luis Potosi: Cueva de los Sabinos, Valler, Apr. 3, 1942. (Bolivar, Bonet, Osorio and Pelaez coll.)

Genus CERATESMUS Chamberlin

Ceratesmus clarus Chamberlin

Ceratesmus clarus Chamberlin, Bull. Univ. of Utah, Biol. Series, vol. 7, no. 2, p. 10, figs. 11-13.

Locality.—Vera Cruz: Gruta de Atoyac, Nov. 12, 1941. (Bonet and Bolivar coll.)

Genus CRYPTYMA, new

No porigerous cones present and pores themselves not detected. Collum with ten marginal lobes separated by deep incisions. Second keels with three lateral lobes, the others with two, separated by deep incisions; an incision on caudal margin setting off a single lobe at base. Tergites with four longitudinal rows of tubercles, 3 in each row on each plate as usual. Penult tergite with six even scallops or lobes along its free border, extending nearly over reduced anal segment.

GENOTYPE.—*Cryptyma lobata*, new species.

Cryptyma lobata, new species

Plate XV, figs. 160 and 161.

Integument pale yellow, more or less dusky from adherent material. Head blackish over vertex, pale, nearly white, below level of antennae.

Antennae clavate to fifth article; the sixth and seventh conically narrowed distad.

Incisions between marginal lobes of collum widest toward bottom so that lobes are broader distally than at bases. Convex surfaces of collum with 2 transverse series of tubercles, four tubercles in the posterior row and six in the anterior. (Fig. 160.)

Surface of collum and other tergites between series of tubercles somewhat granular but without well defined tubercles. Dorsum strongly convex, with keels narrow and depressed. For form of keels see figs. 160 and 161. Posterior dorsal tubercles on 17th and 18th segments moderately enlarged and produced caudad. Nineteenth tergite with six even lobes or scallops. (See further fig. 161.)

Length, about 3.8 mm.

LOCALITY.—Vera Cruz. Fortin, January 15, 1942, one female taken in leaves on cultivated ground (F. Bonet).

Genus ORTHYMA, new

Agreeing in general characters, especially of keels, with *Cryptyma* but bearing conspicuous poriguous processes on segments V, VII, X, XIII and XVI.

GENOTYPE.—*Orthyma clara*, new species.

Orthyma clara, new species

Plate XVI, fig. 165.

Dorsum and upper portion of head appearing dusky or black as in related forms.

The collum with incisions between lobes or scallops deep, as in *Cryptyma*.

The characteristic features of keels are represented in fig. 165. The pore-bearing processes cylindrical, short, directed outward from plane of surface, distally somewhat obliquely truncate.

In the holotype 19 segments are present of which the 18th has the caudal margin crenate, with 6 scallops, as in penult segment of *Cryptyma*. The caudal tubercles of two middle rows on 17th segment enlarged and protruding caudad over the 18th which is covered in dorsal view.

Length, 2.8 mm.

Locality.—Vera Cruz: Fortin, May 15, 1942, in leaves on cultivated ground. One female taken by F. Bonet.

Genus EIRENYMA, new

Body composed of 19 segments in addition to the reduced, setigerous anal lobe. In most features agreeing with *Ilyma* but differing from this and other known related genera excepting *Cryptyma*, in seeming wholly to lack repugnatorial pores. 18th tergite with paired tubercular processes extending over the 19th, the margin of which is evenly crenate.

Genotype.—*Eirenyma munda*, new species.

Eirenyma munda, new species

Plate XVI, figs. 162-164.

Dorsum appearing dusky or black from adherent material as in related forms, the background pale yellow as usual.

Collum with ten scallops along border.

The dorsum less elevated than, e.g., in *S. chipinqueus*, with the sides more slanting. On anterior tergites tubercles of alternating rows not or scarcely more elevated and thus forming ridges, such more elevated series evident only on last segments and even there not pronounced.

Second keels trilobed, the others bilobed as usual; lobes convex, separated by a shallow notch proximad of which there is on each keel a characteristic pit-like depression. (See fig. 162.)

18th tergite with median, spically rounded tubercles projecting caudad over 19th, as the latter does over the 20th in *Ilyma*. (See fig. 163.)

Gonopods of male with telopodite descending freely below coxa, ending in a slender, distally acute curved blade as shown in fig. 164.

Length, 3 mm.

Locality.—Vera Cruz: Vera Cruz, May 31, 1941, under leaves of *Casuarina* in a garden, one adult male (holotype) taken by F. Bonet; Atoyac, November 11, 1941, under leaves in tropical woods, six specimens of which one is an adult male, the others in stage having 18 segments (C. Bolivar and F. Bonet, No. 452).

Genus STYRAXODESMUS Chamberlin

Styraxodesmus chipinqueus, new species

Plate XVI, figs. 166 and 167.

Dorsum appearing black in color because of adherent fine particles of dirt, but the integument beneath this coat pale. Venter and legs pale yellow.

Collum with border presenting ten divisions with corresponding marginal scallops; convex middle area with tubercles in three principal transverse series of which those in middle series are largest.

The following tergites strongly convex above, with sides above keels nearly vertical; surface of each with rounded tubercles arranged in three transverse rows, with alternating longitudinal series of 3 tubercles higher than the intervening ones, there being three of these higher series of each side as in related forms. Keels narrow but little depressed; lateral margin of keels of second tergite with three scallops, of the following ones with two, the indentation between scallops shallow, the angle obtuse. (Fig. 166.) Tubercles of two principal dorsal rows enlarged and more or less confluent into ridges on posterior tergites, the posterior tubercles of these rows on 17th segment produced caudad over following segment, the corresponding tubercles of two preceding tergites similarly but less strongly produced, those of 18th tergite appearing as contiguous scallop-like projections on caudal margin.

For form and relations of posterior segments, see fig. 167.

Length, 3 mm.

Locality.—Nuevo Leon: Chipinque, July 15, 1942, two females (C. Bolivar, F. Bonet, B. Osorio and D. Pelaez. 573).

Genus TELAUXUS, new

A genus differing from *Ceratesmus* in lacking horns or processes on the collum but possessing the usual pair on each of the following tergites.

Genotype.—*Telauxus fractus*, new species.

Telauxus fractus, new species

Plate XVI, figs. 168 and 169.

The type specimen, which lacks the segments behind the twelfth, appears black in color from the adherent material gathered on the surface which is clothed with the usual very short hairs or papillae. Legs and antennae nearly white.

The head concealed from above by the collum the border of which extends widely beyond it. Collum with border presenting 10 crenatures; surface without processes or tubercles.

Keels of second tergite with 3 lateral crenatures, the others with two. Repugnatorial pores born at ends of white cylindrical processes on 5th, 7th, 9th and 10th segments, their distribution behind this not determinable from the incomplete holotype. The horns of second segment bent forward over the border of the collum, expanded conspicuously at distal end as are those of following segments. All processes present also extend forward and then dorsad as shown in figure 168. (See also fig. 169.)

Width of the female holotype, 1.8 mm.

Locality.—Vera Cruz: Fortin, under leaves on cultivated ground, one female, of which the segments beyond the 12th are lost, taken January 15, 1942, by F. Bonet.

Family POLYDESMIDAE

Polydesmus chapultepecus, new species

Plate XVI, fig. 170.

Dorsum a somewhat reddish brown, with legs paler, yellow or nearly so.

Serrations of keels unusually weak with teeth rounded, the one at anterior corner very minute, often nearly obliterated. Non-poriferous keels with 2 serrations or crenations back of tooth at anterior corner, the poriferous with three. Dorsal tubercles rather small, arranged in the usual three transverse series.

The characteristic gonopods are as shown in fig. 170.

Body proportionately rather slender, the length of female allotype being between 17 and 18 mm. and the width, 2.2 mm.

Localities.—Distrito Federal: Chapultepec Park, a male and female taken under leaves, October 7, 1939, by F. Bonet.

Morelos: Llano de Salazar, November 12, 1931, one female taken under leaves.

Family GLOMERIDAE

Genus GLOMERIS Latreille

Glomeris boneti, new species

Plate XVI, fig. 171.

Dorsum shining black or brownish black with a transversely oblong paler area on each side of each ordinary tergite formed of minute light dots; collum with a single, relatively larger pale area embracing most of plate; pygidium without pale areas. Head black except for labral region and organs of Tomosvary and a few minute light dots, which are yellow. Antennae dark brown. Venter and legs brownish yellow.

Body with ten tergites back of the thoracic shield fully developed, the segment preceding the pygidium being dorsally fully developed.

The thoracic plate with lateral lobes at each free and distinct and of form shown in fig 171, these indicating the almost complete overlapping of the posterior of the two tergites, of which the plate is consolidated, over the anterior. The figure will sufficiently indicate relative size and form in relation to adjacent tergites. (Fig. 171).

Female appendages back of coxae of legs of second segment relatively thick, deeply and broadly grooved over anterior face.

Length, 5.2 mm.; width, 2.8 mm.

Locality.—Morelos: Parque Nacional de Zempoala, elevation 3000 meters. A female taken by F. Bonet on May 3, 1941, under logs in woods of *Pinus* and *Abies*.

This is apparently the first record published of a true glomerid from America, although a few specimens have been intercepted at quarantine in plant shipments from Europe. Its small size and the form and development of thoracic shield and other tergites at once separate it from most of previously known species.

Figures and Explanations

Plate I.

Fig. 1. *Platydesmus corzoi,* n. sp. Anterior end, dorsal view.

Fig. 2. *Morelene mundus,* n. sp. Left gonopod of male, anterior view.

Fig. 3. The same. Antenna.

Fig. 4. *Orthoporus chiapasus,* n. sp. Collum, lower part of right side.

Fig. 5. *Orthoporus esperanzae,* n. sp. Collum of female, right side.

Fig. 6. *Orthoporus fortinus,* n. sp. Collum of female, right side.

Fig. 7. *Orthoporus leius,* n. sp. Collum of female, right side.

Fig. 8. *Orthoporus linares,* n. sp. Collum of female, right side.

Fig. 9. The same. Right gonopod of male, anterior view.

Fig. 10. *Orthoporus mundus* Chamberlin. Collum of female, right side.

Fig. 11. *Orthoporus lenonus,* n. sp. Collum of male, right side.

Fig. 12. The same. Right gonopod of male, anterior view.


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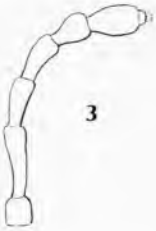
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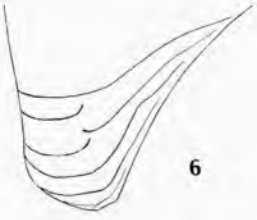
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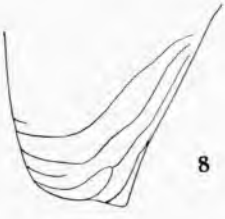
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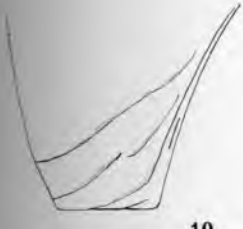
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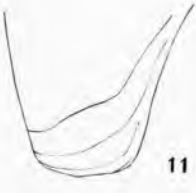
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Plate II.

Fig. 13. *Orthoporus mimus,* n. sp. Right gonopod of male, anterior view.

Fig. 14. The same. Collum of male, right side.

Fig. 15. *Orthoporus guerreronus* (Chamberlin). Right gonopods of male, anterior view.

Fig. 16. *Orthoporus morelus,* n. sp. Collum of male, from right side.

Fig. 17. The same. Right gonopods of male, anterior view.

Fig. 18. *Orthoporus torreonus,* n. sp. Collum of female from right side.

Fig. 19. *Orthoporus ugmalanus,* n. sp. Collum of female, right side.

Fig. 20. *Orthoporus victorianus,* n. sp. Collum of female, right side.

Fig. 21. The same. Collum of male, right side.

Fig. 22. The same. Right gonopods of male, anterior view.

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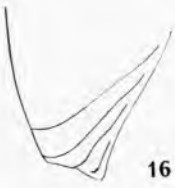

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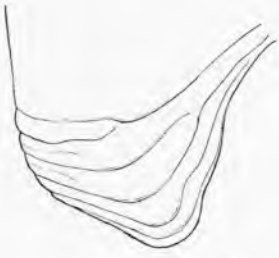

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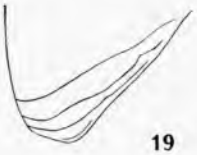

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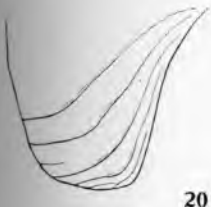

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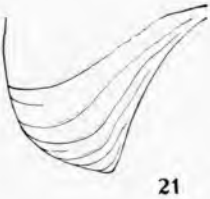

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Plate III.

Fig. 23. *Rhinocricus ixtapanus,* n. sp. Scobina.

Fig. 24. *Rhinocricus morelus,* n. sp. Anterior gonopods of male, anterior view.

Fig. 25. The same. Posterior gonopod of male, distal portion.

Fig. 26. *Rhinocricus potosianus* Chamberlin. Anterior gonopods of male, anterior view.

Fig. 27. The same. Left posterior gonopod of male.

Fig. 28. *Aztecolus nigrior,* n. sp. Anterior gonopods of male, anterior view.

Fig. 29. The same. Right posterior gonopod of male, view slightly mesad of caudal.

Fig. 30. *Toltecolus garcianus,* n. sp. Anterior gonopods of male, anterior view.

Fig. 31. The same. Collum, lower wing, right side.

Fig. 32. The same. Left posterior gonopod of male, posterior view.

Fig. 33. The same. Distal portion of left posterior gonopod, anterior view.

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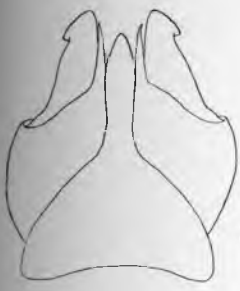

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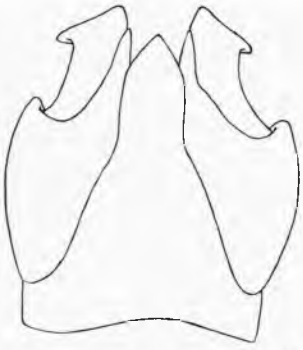

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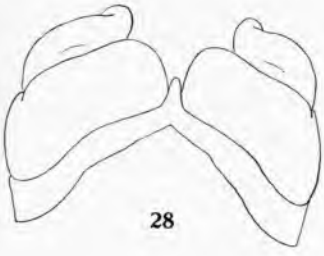

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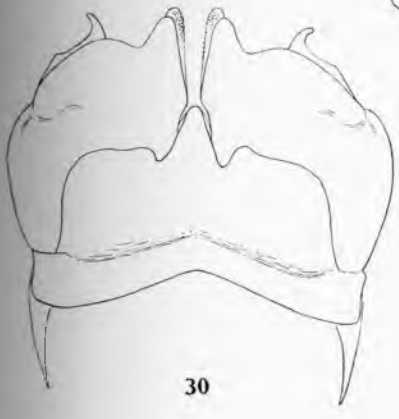

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Plate IV.

Fig. 93. *Hiltonius carpinus,* n. sp. Right posterior gonopod of male, anterior view. (Tamaulipas.)

Fig. 35. The same. Anterior gonopods of male, anterior view. (Specimen from Tepoztlan.)

Fig. 36. The same. Right posterior gonopods of male, anterior view. (Specimen from Tepoztlan.)

Fig. 37. *Hiltonius crassus,* n. sp. Left posterior gonopod of male, anterior view.

Fig. 38. *Hiltonius federalis,* n. sp. Left posterior gonopod of male, anterior view.

Fig. 39. *Hiltonius michoacanus,* n. sp. Right posterior gonopod.

Fig. 40. The same. Distal portion of right posterior gonopod from caudal side.

Fig. 41. The same. Distal view of apical portion of left posteriod gonopod.

Fig. 42. *Hiltonius veracruzanus,* n. sp. Anterior gonopods of male, anterior view.

Fig. 43. The same. Distal portion of right posterior gonopod, caudal side.

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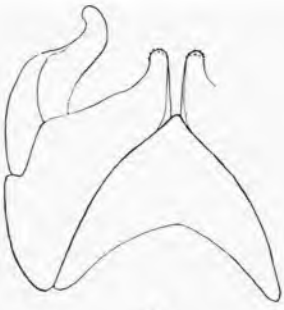

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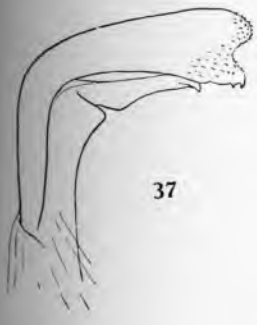

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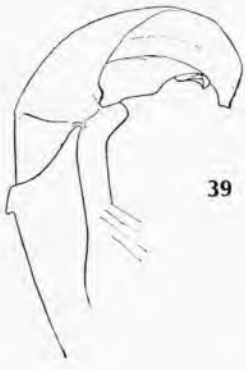

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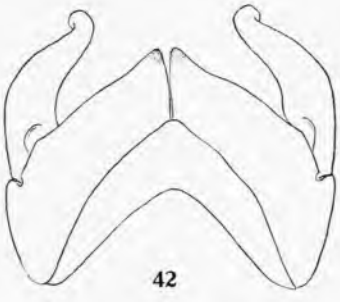

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Plate V.

Fig. 44. *Messicobolus totonacus,* n. sp. Anterior gonopods, anterior view.

Fig. 45. The same. Left posterior gonopod.

Fig. 46. The same. Right posterior gonopod, posterior view.

Fig. 47. *Tarascolus bolivari,* n. sp. Anterior gonopod, posterior view.

Fig. 48. The same. Coxal processes of third legs of male, ventral view.

Fig. 49. The same. Basal articles of fifth legs of male, anterior view, to show coxal processes.

Fig. 50. The same. Collum, lower part of right wing.

Fig. 51. *Tarascolus clarus,* n. sp. Right posterior gonopod, caudal view.

Fig. 52. *Paraiulus pueblanus,* n. sp. Right posterior gonopod of male, caudal aspect.

Fig. 53. *Paraiulus rosanus,* n. sp. Collum of male, from left side.

Fig. 54. The same. Right anterior gonopod of male, posterior view.

Fig. 55. The same. Right posterior gonopod of male, sucaudal view.

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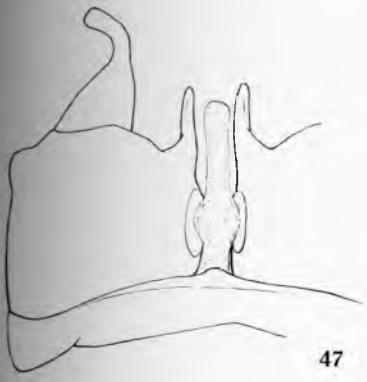

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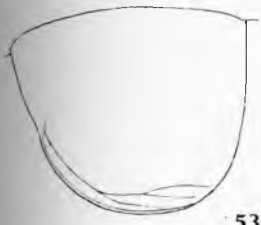

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Plate VI.

Fig. 56. *Paraiulus zempoalus,* n. sp. Left anterior gonopod of male with sternite, anterior view.

Fig. 57. The same. Left anterior gonopod, distocaudal view.

Fig. 58. The same. Left posterior gonopod of male, caudal view.

Fig. 59. *Pheniulus phenotypus,* n. sp. Anterior gonopods of male, anterior view.

Fig. 60. The same. Left posterior gonopod of male, caudal view.

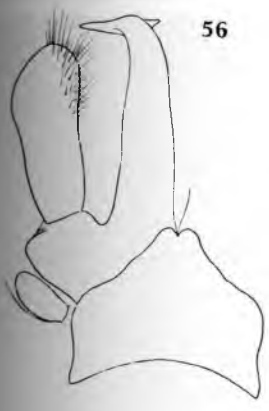
Fig. 61. The same. Left posterior gonopod, ectal view.

Fig. 62. *Pheniulus mimeticus,* n. sp. Right posterior gonopod of male, caudal view.

Fig. 63. The same. Right anterior gonopod, anterior (or subventral) view.

Fig. 64. *Cleidogona zempoala,* n. sp. Left gonopod of male, ectal view.

Fig. 65. The same. Ninth left leg of male, caudal view.



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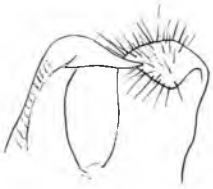

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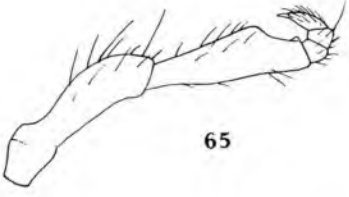

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Plate VII.

Fig. 66. *Cleidogona atoyaca,* n. sp. Left gonopod of male, ectal view.

Fig. 67. The same. Caudal view of coxa of tenth right leg of male.

Fig. 68. The same. Caudal view of coxa of eleventh right leg of male.

Fig. 69. *Cleidogona leona,* n. sp. Left gonopod of male, ectal view.

Fig. 70. The same. Caudal view of ninth left leg of male.

Fig. 71. The same. Caudal view of coxa of tenth left leg of male.

Fig. 72. The same. Caudal view of coxa of eleventh leg of male.

Fig. 73. *Cleidogona rafaela.* Left gonopod of male, ectal view.

Fig. 74. The same. Caudal view of left ninth leg of male.

Fig. 75. The same. Two first joints of eleventh right leg of male, caudal aspect, to show coxal apophyses.

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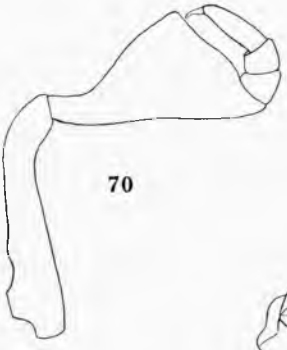

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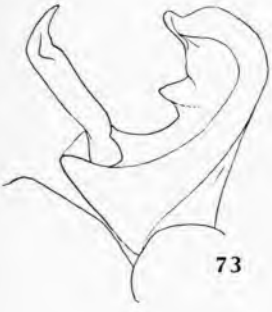

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Plate VIII.

Fig. 76. *Rhysodesmus alpuyecus,* n. sp. Right gonopod of male, subventral view.

Fig. 77. The same. Right gonopod of male, ectal view.

Fig. 78. *Rhysodesmus bolivari,* n. sp. Left gonopod of male, ventral view.

Fig. 79. *Rhysodesmus cumbres,* n. sp. Left gonopod of male, ventral view.

Fig. 80. The same. Left gonopod, ectal view.

Fig. 81. *Rhysodesmus eutypus,* n. sp. Left gonopod of male, caudal view.

Fig. 82. The same. Left gonopod, lateral view.

Fig. 83. *Rhysodesmus guardanus,* n. sp. Right gonopod of male, ventral view.

Fig. 84. The same. Left gonopod, ectal view.

Fig. 85. *Rhysodesmus morelus,* n. sp. Left gonopod of male, ventral view.

Fig. 86. The same. Left gonopod, ectal view.


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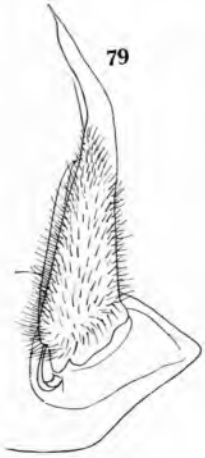
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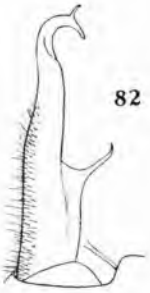
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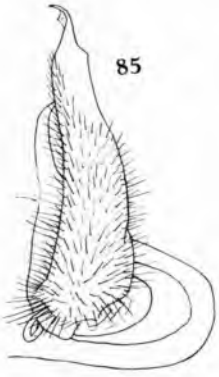
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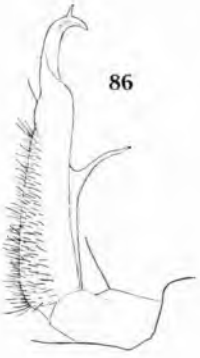
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Plate IX.

Fig. 87. *Rhysodesmus elestribus,* n. sp. Right gonopod of male, ventral view.

Fig. 88. The same. Submesal view of distal portion of right gonopod.

Fig. 89. *Rhysodesmus intermedius,* n. sp. Gonopod of male, ventral view.

Fig. 90. The same. Left gonopod, subectal view.

Fig. 91. *Rhysodesmus garcianus,* n. sp. Gonopods of male, ventral view.

Fig. 92. The same. Left gonopod, ectal view.

Fig. 93. *Rhysodesmus malinche,* n. sp. Right gonopod of male, ventral view.

Fig. 94. The same. Left gonopod, ectal view.

Fig. 95. *Rhysodesmus perotinus,* n. sp. Right gonopod of male, ventral view.

Fig. 96. The same. Left gonopod, lateral view.


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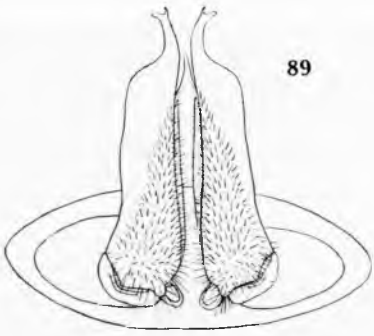
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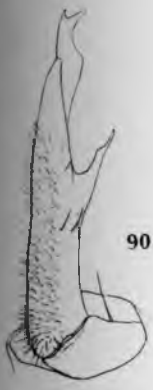
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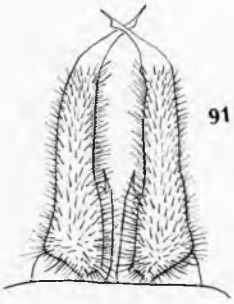
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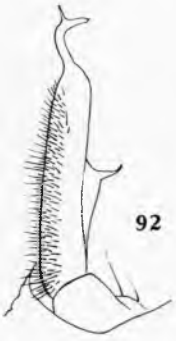
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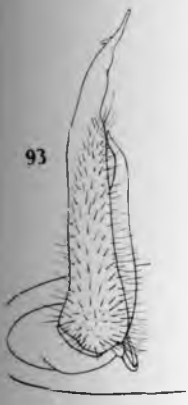
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Plate X.

Fig. 97. *Rhysodesmus pater,* n. sp. Gonopod of male, ventral view.

Fig. 98. The same. Left gonopod, ectal view.

Fig. 99. *Rhysodesmus rubrimarginis,* n. sp. Gonopods of male, ventral view.

Fig. 100. The same. Left gonopod, ectal view.

Fig. 101. *Rhysodesmus tacubayae,* n. sp. Right gonopod of male, subventral view.

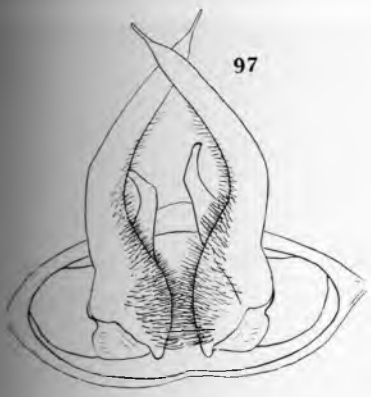
Fig. 102. The same. Left gonopod, ectal view.

Fig. 103. *Rhysodesmus tepoztlanus,* n. sp. Right gonopod of male, subventral view.

Fig. 104. The same. Left gonopod, sublateral view.

Fig. 105. *Rhysodesmus viabilis,* n. sp. Right gonopod of male, ventral aspect.

Fig. 106. The same. Left gonopod, lateral aspect.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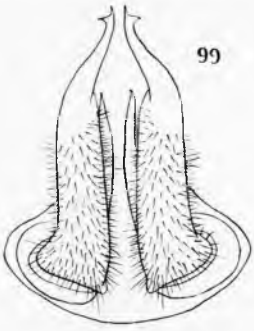
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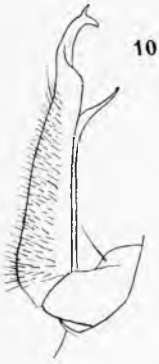
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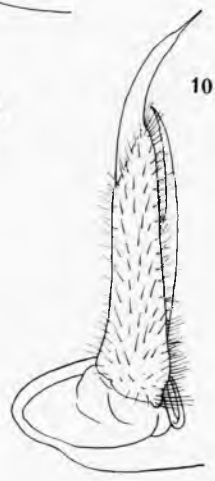
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Plate XI.

Fig. 107. *Rhysodesmus frionus,* n. sp. Right gonopod of male, central aspect.

Fig. 108. The same. Left gonopod, lateral aspect.

Fig. 109. *Rhysodesmus esperanzae,* n. sp. Left gonopod of male, ventral aspect.

Fig. 110. The same. Left gonopod, mesal aspect.

Fig. 111. *Rhysodesmus elestribus,* n. sp. Left gonopod of male, subcaudal view.

Fig. 112. The same. Left gonopod, ectal view.

Fig. 113. *Rhysodesmus tacubayae,* n. sp. Right gonopod, ventral view.

Fig. 114. The same. Left gonopod, ectal view.

Fig. 115. *Acentronus minor,* n. sp. Gonopods of male, ventral view.

Fig. 116. The same. Left gonopod, ectal view.


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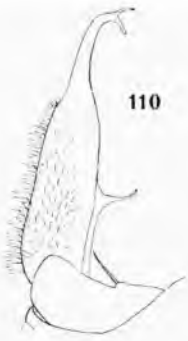
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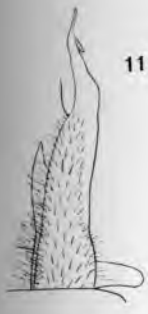
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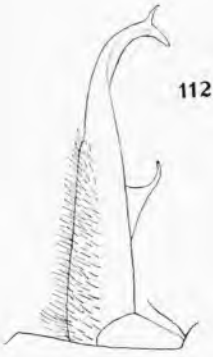
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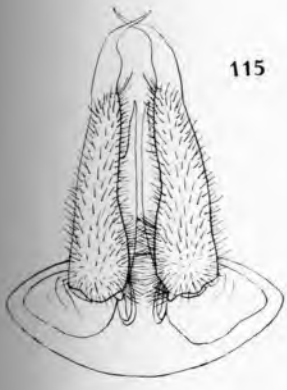
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Plate XII.

Fig. 117. *Cruzodesmus ergus,* n. sp. Gonopods of male, ventral view.

Fig. 118. The same. Left gonopod, ectal view.

Fig. 119. *Cruzodesmus browni,* n. sp. Left gonopod of male, ventral view.

Fig. 120. *Cruzodesmus purojenus,* n. sp. Right gonopod of male, ventral view.

Fig. 121. The same. Distal part of telopodite of left gonopod, lateral view.

Fig. 122. The same. Tip of telopodite of gonopod of another specimen.

Fig. 123. *Ceuthauxus morelus,* n. sp. Right gonopod of male in situ, caudo-ventral aspect.

Fig. 124. The same. Right gonopod, mesal view.

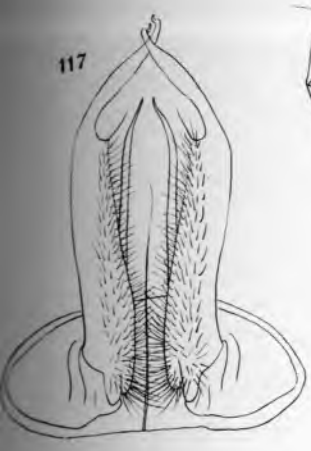
Fig. 125. *Rachidomorpha vicinus,* n. sp. Left goponod of male, subventral aspect.

Fig. 126. The same. Left gonopod, mesal aspect.

Fig. 127. *Pararachistes potosinus,* n. sp. Anterior segments, dorsal view.

Fig. 128. *Pararachistes galeanae,* n. sp. Anterior segments, dorsal view.

Fig. 129. The same. Ninth tergite.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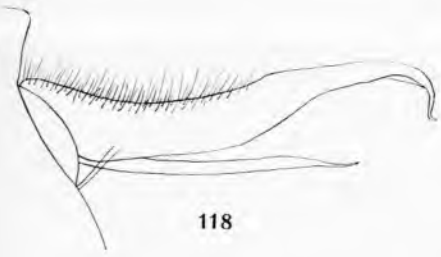
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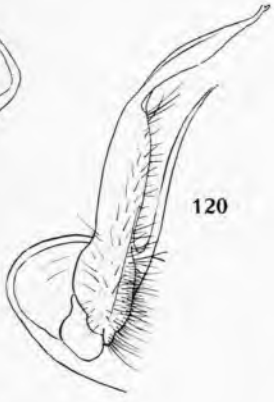
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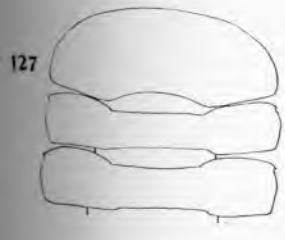
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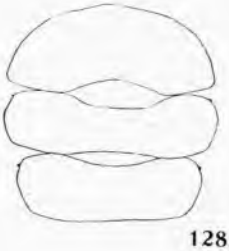
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Plate XIII.

Fig. 130. *Neoleptodesmus dispersus,* n. sp. Right gonopod of male, ventral aspect.

Fig. 131. The same. Right gonopod, ventral aspect.

Fig. 132. *Zeuctodesmus ferrugineus,* n. sp. Tenth left keel.

Fig. 133. The same. Right gonopod of male, caudal view.

Fig. 134. The same. Right gonopod, ectal view.

Fig. 135. *Amplinus xelitlus,* n. sp. Right gonopod of male, ectal view.

Fig. 136. *Amplinus crenus,* n. sp. Right gonopod of male, ectal view.

Fig. 137. *Chondrodesmus nannus,* n. sp. Left gonopod of male, ventral view.

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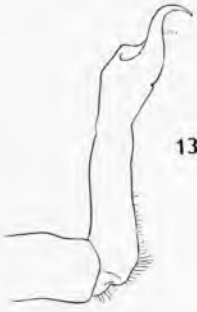

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Plate XIV.

Fig. 138. *Peridontodesmus medius,* n. sp. Right keels of first, second and third tergites.

Fig. 139. The same. Right eleventh keel.

Fig. 140. *Peridontodesmus morelus,* n. sp. Right second and third keels in outline.

Fig. 141. The same. Right eleventh keels.

Fig. 142. The same. Right thirteenth keels.

Fig. 143. The same. Telopodite of male gonopod, dorsomesal view.

Fig. 144. *Peridontodesmus parvus,* n. sp. Right first and second keels.

Fig. 145. *Sierresmus hidalgonus,* n. sp. Right eleventh keel.

Fig. 146. The same. Right gonopod of male.

Fig. 147. *Sierresmus hidalgonus,* n. sp. First and second right keels.


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Plate XV.

Fig. 148. *Maderesmus tepoztlanus,* n. sp. Left gonopod of male, caudo-ventral view.

Fig. 149. *Pinesmus setosus,* n. sp. Right gonopod of male, ventral view.

Fig. 150. *Kalesmus phanus,* n. sp. Second and third right keels.

Fig. 151. The same. Eleventh right keel.

Fig. 152. The same. Right gonopod of male, mesoventral aspect.

Fig. 151. *Kalesmus eutropis,* n. sp. Right gonopod of male, subventral aspect.

Fig. 154. *Ilyma morela,* n. sp. Caudal end, dorsel view.

Fig. 155. The same. Left gonopod of male, submesal aspect.

Fig. 156. The same. Right gonopod, ectal aspect.

Fig. 157. *Ilyma potosina,* n. sp. Caudal end, lateral view.

Fig. 158. The same. Ninth right keel.

Fig. 159. *Apsyma atopa,* n. sp. Caudal end, view a little dorsal of lateral.

Fig. 160. *Cryptyma lobata,* n. sp. Anterior end, dorsal view.

Fig. 161. The same. Caudal end, dorsal view.

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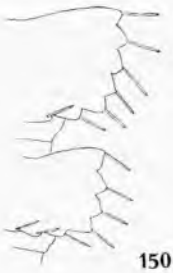

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Plate XVI.

Fig. 162. *Eirenyma munda,* n. sp. Anterior end, right side, dorsal view.

Fig. 163. The same. Posterior end, dorsal view.

Fig. 164. The same. Left gonopod of male, subcaudal view.

Fig. 165. *Orthyma clara,* n. sp. Sixth and seventh right keels.

Fig. 166. *Styraxodesmus chipinqueus,* n. sp. Ninth right keel.

Fig. 167. The same. Caudal end, dorsal view.

Fig. 168. *Telauxus fractus,* n. sp. Anterior segments, lateral view.

Fig. 169. The same. Twelfth segment, anterior aspect.

Fig. 170. *Polydesmus chapultepecus,* n. sp. Left gonopod of male, mesal view.

Fig. 171. *Glomeris boneti,* n. sp. Anterior tergites, later view.

Fig. 172. *Sphaeriodesmus griseus,* n. sp. Right gonopod of male, caudoventral view.

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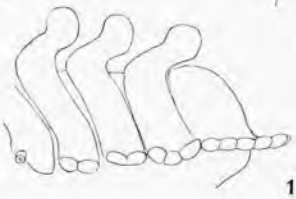

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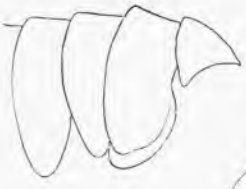

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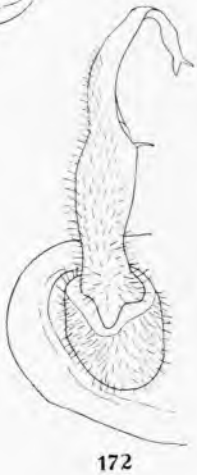

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